

**Final**

**ENVIRONMENTAL ASSESSMENT FOR THE  
BEDDOWN AND FLIGHT OPERATIONS OF UNMANNED AIRCRAFT  
SYSTEMS AT GRAND FORKS AIR FORCE BASE, NORTH DAKOTA**



**U.S. Department of Homeland Security**

**U.S. Customs and Border Protection**

**U.S. Border Patrol**

**Washington, D.C.**

*In cooperation with*

**U.S. Air Force**

**Air Mobility Command**

**Scott AFB, IL**

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## **EXECUTIVE SUMMARY**

### **INTRODUCTION**

The United States (U.S.) Customs and Border Protection (CBP), a component within the Department of Homeland Security (DHS), has the responsibility of protecting the nation's borders against the illegal entry of terrorists and terrorist weapons and to enforce the laws that protect the U.S. homeland. In order to accomplish this mission, CBP Air and Marine (A&M) requires a location for northern border operations. In order to better meet this mission, CBP A&M proposes to establish Unmanned Aircraft System (UAS) capability at Grand Forks Air Force Base (GFAFB) in Grand Forks, North Dakota. CBP A&M identified GFAFB as a potential permanent location because the Base infrastructure meets or exceeds the minimum support requirements for flight operations, provides increased physical security, provides synergy with other UAS operators and allows for the reutilization of existing facilities which reduces costs and time required to establish a new facility complex. GFAFB would become the second operating center for CBP UASs, primarily for Northern border and Northern hemisphere missions.

This Environmental Assessment (EA) will evaluate the potential environmental consequences associated with each proposed alternative for UAS flight operations and the infrastructure modification requirements necessary for the incoming CBP mission.

### **PURPOSE AND NEED**

The purpose of this action is to establish a U.S. CBP A&M Northern Border Operations Center that has the capability to support UAS operations in the vicinity of GFAFB. CBP A&M has identified the need to establish a UAS operating location along the northern border. GFAFB has been identified as the location for the beddown of up to six Predator B UASs that will be vital to securing the Northern Border of the U.S. The

EA for the Beddown and Flight Operations of Unmanned Aircraft Systems at GFAFB, North Dakota  
implementation of this mission is a crucial component of DHS's layered approach to border security. The use of UASs in support of these mission requirements serves as a "force-multiplier" for this agency.

## **DESCRIPTION OF PROPOSED ACTION AND ALTERNATIVES**

### **Alternative 1: No Action Alternative**

Analysis of the No-Action Alternative provides a basis for comparing the environmental impacts of the Proposed Action and alternatives with existing conditions. Under the No-Action Alternative, neither CBP personnel nor any CBP assets would be deployed to GFAFB. No airspace management actions or modifications would occur. However, implementation of the No-Action Alternative would impact the successful implementation of the Northern Border mission and impair protection of U.S. national security interests.

### **Alternative 2: Proposed Action**

The Proposed Action would provide the equipment, personnel and infrastructure at GFAFB to support CBP's mission. The Proposed Action would also include flight operations for the Predator B. Proposed facility projects include renovations to Building 600 for use as a hangar for the six CBP UASs and Building 541 to house the associated Ground Control Station (GCS) and construction associated with the installation of communications and backup power infrastructure.

### **Alternative 3: Additional Facilities Construction**

The United States Air Force retains first right of usage for Buildings 541 and 600 and could require CBP to vacate the facilities. Should this occur, CBP would be required to construct a new 10,000 square meter facility to house the GCS functions, satellite

EA for the Beddown and Flight Operations of Unmanned Aircraft Systems at GFAFB, North Dakota uplink, and associated personnel and to provide hangar space for the Predator B's. This facility would also require a backup power supply. CBP proposes to construct this hangar in the grassy area at the very south end of the Bravo Ramp. Construction of the hangar in this area would require the relocation of four existing above ground storage tanks. Implementation of this Alternative would also include all actions as described in Alternative 2.

#### **Alternatives Considered but Eliminated from Further Consideration**

The Proposed Action is to beddown Predator B assets at GFAFB. While CBP A&M is considering establishing a total of five Air Wings to secure the Northern Border, the availability of aircraft would limit the basing of operations assets to one location in the foreseeable future. Locations at Bellingham, Washington; Great Falls, Montana; Detroit, Michigan; and Plattsburgh, New York were considered but eliminated from further consideration in this EA.

#### **AFFECTED ENVIRONMENT AND CONSEQUENCES**

Implementation of the Proposed Action would disturb less than 0.5 acres for the construction of antenna towers, communication lines, and backup generators. Areas disturbed occur in improved or semi-improved areas within GFAFB.

The Proposed Action would have no direct impact on surface waters and waters of the U.S., floodplains, threatened or endangered species, cultural, historical or archeological resources, roadways/traffic or minority populations. Implementation of the Proposed Action is anticipated to have minor impacts to all resources at GFAFB. These resources include: land usage, geology and soils, hydrology and groundwater, vegetative habitat, wildlife habitat, air quality, noise, utilities, hazardous materials,

EA for the Beddown and Flight Operations of Unmanned Aircraft Systems at GFAFB, North Dakota  
energy consumption, aesthetic and visual resources, human health and safety or  
airspace management.

## **FINDINGS AND CONCLUSIONS**

Based upon the analysis conducted in this EA, implementation of Alternative 2: Proposed Action, or Alternative 3: New Facility Construction at GFAFB, is not anticipated to have a significant adverse impact to the environment.

## **1.0 INTRODUCTION**

The United States (U.S.) Customs and Border Protection (CBP), a component within the Department of Homeland Security (DHS), has the responsibility of protecting the nation's borders against the illegal entry of terrorists and terrorist weapons and to enforce the laws that protect the U.S. homeland. This is done through the detection, interdiction and apprehension of those who attempt to illegally enter or smuggle any person or contraband across the sovereign borders of the U.S. Within CBP, CBP Air and Marine (A&M) protects the American people and critical infrastructure by using integrated and coordinated A&M Forces to detect, monitor, intercept, and track illegal activities such as the illegal movement of people and the transportation of illicit drugs or contraband; thereby guarding our borders, preventing acts of terrorism, and protecting the American public. This mission makes CBP A&M a crucial component of DHS's layered approach to border security.

The mission of CBP is to serve as guardians of our Nation's borders, to safeguard the homeland at and beyond our borders, to protect the American public from terrorists and instruments of terror and steadfastly enforce the laws of the U.S. while fostering our Nation's economic security. In order to accomplish this mission, CBP A&M requires a location for northern border operations. In order to better meet this mission, CBP A&M proposes to establish Unmanned Aircraft System (UAS) capability at Grand Forks Air Force Base (GFAFB) in Grand Forks, North Dakota (Figure 1-1). CBP A&M identified GFAFB as a potential permanent location because the Base infrastructure meets or exceeds the minimum support requirements for flight operations, provides increased physical security, provides synergy with other UAS operators and allows for the

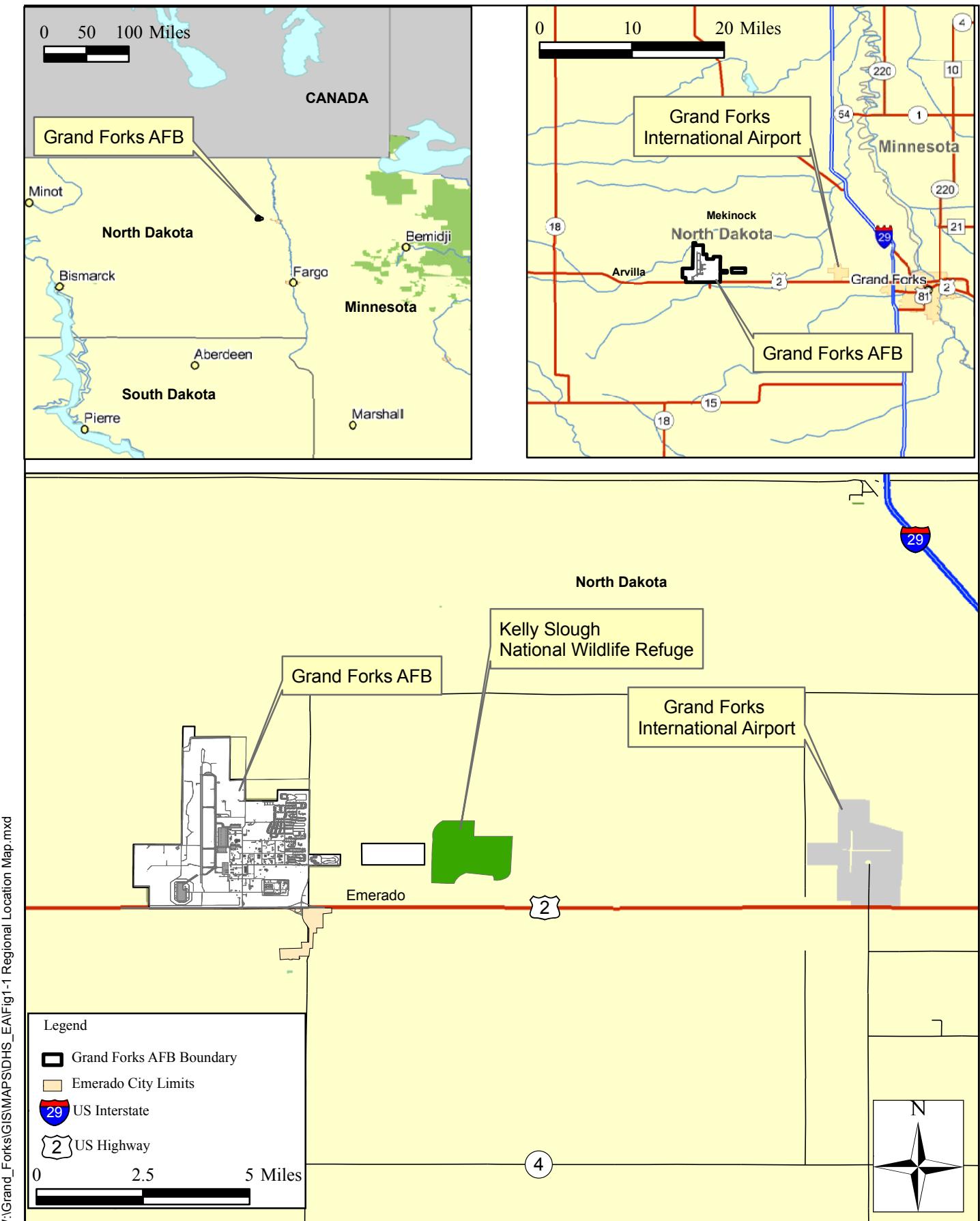


Figure 1-1. Regional Location Map of Grand Forks Air Force Base

EA for the Beddown and Flight Operations of Unmanned Aircraft Systems at GFAFB, North Dakota  
reutilization of existing facilities which reduces costs and time required to establish a new facility complex. GFAFB would become the second operating center for CBP UASs, primarily for Northern border and Northern hemisphere missions.

CBP A&M end strength is projected to be six Predator B aircraft with the timing and delivery contingent upon funding but anticipated to be complete by Fiscal Year (FY) 12. CBP A&M at GFAFB would be comprised of a Launch and Recovery Element (LRE) for takeoff and landings of UAS, Ground Control Station (GCS) and a satellite earth station that would provide command and control capability of CBP UAS when flying beyond line of site (BLOS) from the LRE airfield on GFAFB. Additional locations for BLOS command and control of CBP UAS, are located at CBP A&M UAS sites in Sierra Vista, Arizona and the Air and Marine Operations Center (AMOC) at Riverside, California.

This Environmental Assessment (EA) will evaluate the potential environmental consequences associated with each proposed alternative for UAS flight operations and the infrastructure modification requirements necessary for the incoming CBP mission.

## **1.1 BACKGROUND**

In 2004, CBP began utilizing UASs as a law enforcement multiplier along the southwest border of the U.S. During 2004 and 2005, CBP flew Hunter and Hermes UASs to protect the southern border. The first Predator B was introduced into service in October 2005. Since that time, the Predator B has flown more than 1,310 hours on the southwest border and assisted in 3,065 apprehensions and the seizure of 14,240 pounds of marijuana. Four Predator B UASs now operate out of Sierra Vista, Arizona. CBP is proposing to begin operating a single Predator B at GFAFB, North Dakota in 2008.

### Aircraft Characteristics.

The Predator B is a high-altitude, long endurance aircraft that has the capability to perform surveillance and reconnaissance at altitudes

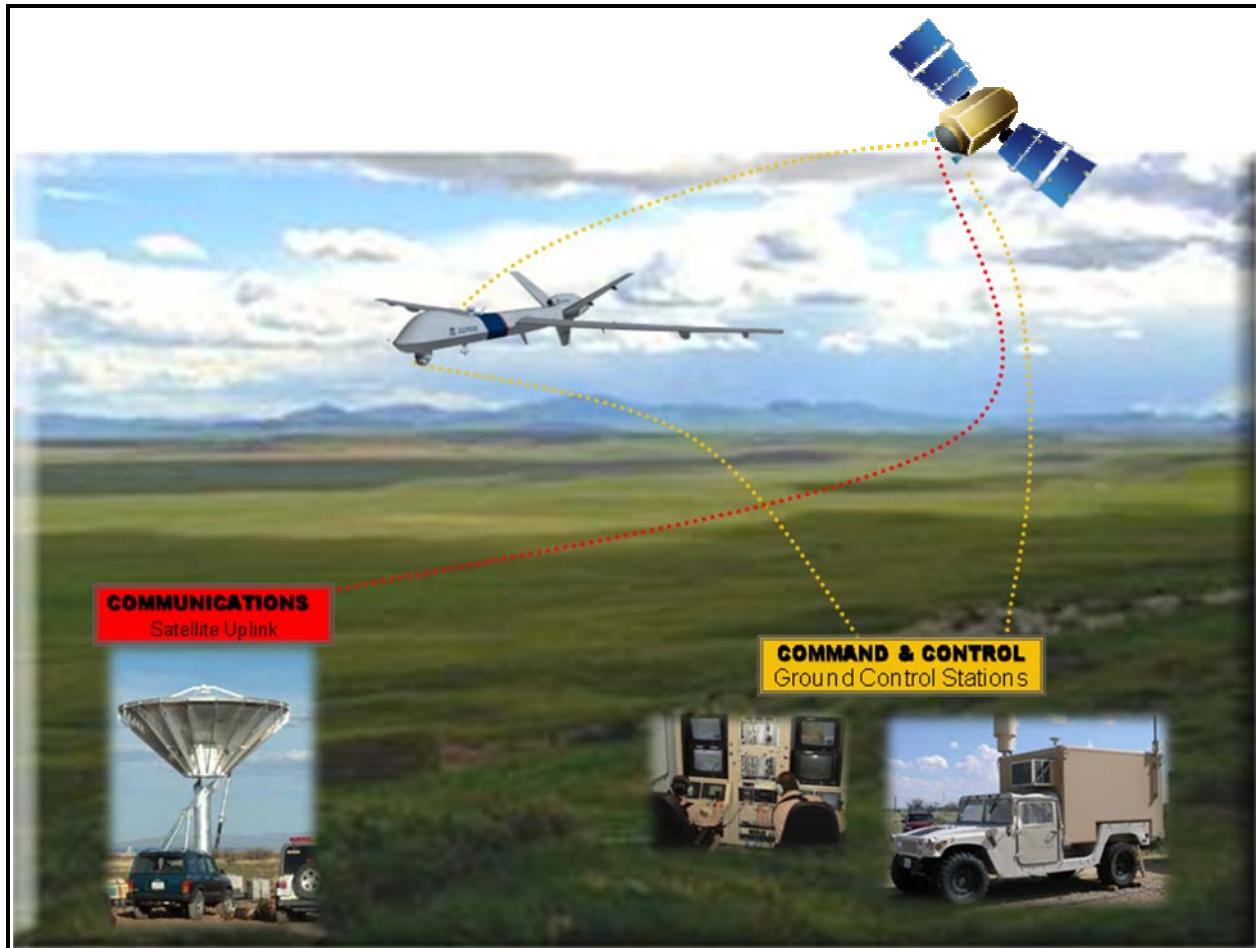


**Figure 1-2. Predator B**

up to 50,000 feet (Figure 1-2). The Predator B is approximately 66 feet wide, 36.2 feet long and nearly 11.8 feet tall. It hosts a 900-horsepower turbo-prop engine that provides the capability for airspeeds of more than 250 miles per hour. The Predator B utilizes a larger and more capable airframe than earlier Predator models and has the capability to carry more than 15 times the payload and cruise at three times the speed of earlier models. The aircraft is only one component of the Predator system. The UAS system is additionally comprised of the LRE with associated GCS, Ground Data Terminal (GDT) antennas and satellite uplink for BLOS command and control (Figure 1-3).

The GCS contains common flight control software required for operation of the aircraft. The basic crew for the Predator is one pilot and one sensor operator. The pilot controls the aircraft using a standard flight stick and associated instruments. The pilot can control the aircraft from the GCS using a line of sight data link or a satellite uplink. The GCS is capable of basic data processing and evaluation including automatic target recognition. This allows the mission crew to independently perform identification and surveillance. The GCS portion of the system may be remotely located from the LRE.

Take-offs and landings are performed by the LRE. The LRE consists of equipment and personnel capable of servicing and launching/recovering aircraft in line-of-sight control. After launch, control of an airborne aircraft may be transferred to a remote operations GCS to execute the mission.



**Figure 1-3. Predator System Components**

**Grand Forks Air Force Base.** GFAFB is located in Grand Forks County near the North Dakota-Minnesota border (Figure 1-1). The Base is adjacent to the City of Emerado, and 15 miles west of the City of Grand Forks. The Base comprises 5,422 acres and is located in a predominantly agricultural area. Interstate 29 is located east of the Base near the City of Grand Forks.

GFAFB is home to the 319th Air Refueling Wing (319 ARW). The mission of the 319 ARW is to guarantee global reach by providing extended range in the air-transporting of people and cargo where and when they are needed by the U.S. GFAFB is also home to several tenant units including the 373rd Training Squadron Detachment, the Air Force Audit Agency, Area Defense Counsel, Office of Special Investigation, Commissary, Base Exchange, American Red Cross and the Army Corps of Engineers.

## **1.2 PROPOSED ACTION**

The Proposed Action would provide personnel and the necessary infrastructure at GFAFB to support CBP's mission of protecting the Northern Border. The Proposed Action would also include flight operations for the Predator B UAS. Proposed facility projects include renovations to Buildings 600 and 541 to house the six CBP UASs and the associated GCS and construction associated with the installation of communications and backup power infrastructure. These actions are described in more detail in the following sections.

## **1.3 PURPOSE AND NEED FOR THE PROPOSED ACTION**

The purpose of this action is to establish a U.S. CBP A&M Northern Border Operations Center that has the capability to support UAS operations in the vicinity of GFAFB. CBP A&M has identified the need to establish a UAS operating presence along the Northern Border. GFAFB has been identified as the first of potentially several UAS operating locations that CBP A&M would establish to secure the Northern Border. The need for this project would support CBP's mission which entails the protection of the nation's borders against the illegal entry of terrorists and terrorist weapons and the enforcement of laws that protect the U.S. homeland. This is done through the detection, interdiction

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and apprehension of those who attempt to illegally enter or smuggle any person or contraband across the sovereign borders of the U.S. The implementation of this mission is a crucial component of DHS's layered approach to border security. The use of UASs in support of these mission requirements serves as a "force-multiplier" for this agency.

## **1.4 REGULATORY COMPLIANCE**

### **1.4.1 NEPA**

The National Environmental Policy Act (NEPA) requires federal agencies to take into consideration the potential environmental consequences of proposed actions in their decision-making process. The intent of NEPA is to protect, restore, and enhance the environment through well-informed federal decisions. The Council on Environmental Quality (CEQ) was established under NEPA to implement and oversee federal policy in this process. The CEQ subsequently issued the Regulations for implementing the procedural provisions of NEPA (40 Code of Federal Regulations (CFR) Sections 1500–1508) (CEQ 1978). These requirements specify that an EA be prepared to:

- Briefly provide sufficient evidence and analysis for determining whether to prepare an Environmental Impact Statement (EIS) or a Finding of No Significant Impact (FONSI).
- Aid in an agency's compliance with NEPA when an EIS is not necessary.
- Facilitate preparation of an EIS when one is necessary.

The activities addressed within this document constitute a federal action and therefore must be assessed in accordance with NEPA. To comply with NEPA, as well as other pertinent environmental requirements, the decision-making process for the Proposed Action includes the development of this EA to address the environmental issues related to the proposed activities. Each federal agency has their own procedures for

EA for the Beddown and Flight Operations of Unmanned Aircraft Systems at GFAFB, North Dakota implementing NEPA, and the DHS implementing procedures are contained in Management Directive 5100.1, *Environmental Planning Program*.

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#### **1.4.2 Executive Order 12372**

Executive Order (EO) 12372, *Intergovernmental Review of Federal Programs*, requires intergovernmental notifications prior to making any detailed statement of environmental impacts. Through the process of Interagency and Intergovernmental Coordination for Environmental Planning (IICEP), the proponent must notify concerned federal, state, and local agencies and allow them sufficient time to evaluate potential environmental impacts of a proposed action. This IICEP process also includes coordination with federally recognized American Indian and Alaska Native governments in order to meet the policies set forth in EO 13084, *Consultation and Coordination with Indian Tribal Governments*. Comments from all agencies are subsequently incorporated into the Environmental Impact Analysis Process.

In order to meet the requirements of NEPA, EO 12372 and EO 13084 federal, state, and local agencies as well as members of the general public will be invited to comment on this EA. In order to facilitate this coordination, correspondence letters were sent out to potentially interested parties prior to the writing of this EA.

#### **1.4.3 Additional Environmental Statutes and Regulations**

Prior to implementation of the actions described in this EA, permitting and compliance with applicable statutes and regulations would occur. The following is a partial list of applicable laws and regulations that guided the development of the EA.

- *National Environmental Policy Act*, Public Law 91-190, 42 United States Code (USC) 4321-4347, January 1, 1970;

- (CEQ regulations, 40 CFR Parts 1500 through 1505;
- EO 11988 and 11990, *Floodplain Management and Protection of Wetlands*;
- EO 12898, *Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations*;
- EO 13045, *Protection of Children from Environmental Health Risks and Safety Risks*;
- *Clean Air Act* (1970, Amended 1990);
- EO 13423 *Strengthening Federal Environmental, Energy, and Transportation Management* is a directive that requires federal agencies to implement sustainable practices for a variety of water, energy and transportation related activities;
- 29 CFR Occupational Safety and Health Standards;
- 40 CFR Part 93.153, Air Conformity Determination;
- Resource Conservation Recovery Act (RCRA) 1970.

#### **1.4.4 Cooperating Agency**

The CBP A&M is the proponent for this proposal and is the lead agency for the preparation of the document. Other agencies such as the United States Air Force (USAF) may participate in the process by serving as a cooperating agency.

As defined in 40 CFR §1508.5, a cooperating agency...

means any Federal agency other than a lead agency which has jurisdiction by law or special expertise with respect to any environmental impact involved in a proposal (or a reasonable alternative) for legislation or other major Federal action significantly affecting the quality of the human environment.

The CBP A&M Proposed Action would occur on a USAF base under the control of Air Mobility Command; as such the USAF has been working in concert with the CBP A&M as part of a multidisciplinary team to complete this project.

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## **2.0 PROPOSED ACTION AND ALTERNATIVES**

The Proposed Action and Alternatives section of this EA provides the framework for the impact analysis in Section 3. Section 2 defines the scope of the Proposed Action and alternatives and serves as the basis for further evaluation. Information is also provided on the No Action Alternative and alternatives that were considered but eliminated from further consideration.

### **2.1 ALTERNATIVE 1: NO ACTION ALTERNATIVE**

An analysis of the No-Action Alternative provides a basis for comparing the environmental impacts of the Proposed Action and alternatives with existing conditions. Under the No-Action Alternative, neither CBP personnel nor any CBP assets would be deployed to GFAFB. No airspace management actions or modifications would occur. However, implementation of the No-Action Alternative would impact the successful implementation of the Northern Border mission and impair protection of U.S. national security interests.

### **2.2 ALTERNATIVE 2: PROPOSED ACTION ALTERNATIVE**

The Proposed Action would provide the equipment, personnel and infrastructure at GFAFB necessary to support CBP's mission. The Proposed Action would also include flight operations for the Predator B. Proposed facility projects include renovations to Building 600 for use as a hangar for the six CBP UASs and renovations to Building 541 to house the associated GCS equipment and the installation of communications and backup power infrastructure. These actions are described in more detail in the following subsections.

## 2.2.1 Facility Requirements

As part of Alternative 2, CBP intends to utilize Building 541 to house the GCS functions and Building 600 as a hangar for the UASs. Building 541 would require minor renovations to the interior of the facility, installation of a backup power supply and installation of a satellite uplink in order to accommodate the UAS mission. Building 600 would also require some minor interior renovations to accommodate the Predator B aircraft and associated personnel (Figure 2-1).



**Figure 2-1. Proposed UAS Facility Locations**

In addition, implementation of Alternative 2 would include the construction of two (2) 20-foot towers to support UAS antennas on the west side of the airfield outside of the

runway clear zone. With regard to support personnel, implementation of Alternative 2 would include an influx of approximately 60 CBP personnel to GFAFB. This influx would occur over a four year period.

## **2.2.2 UAS Flight Operations**

**Airspace Requirements.** In order to conduct UAS flight operations from GFAFB, CBP is required to coordinate with the Federal Aviation Administration (FAA) to develop an airspace construct in the vicinity of GFAFB. This airspace construct must allow for UAS operations (take offs, landings, transition from Class D to Class A airspace) and UAS training operations (take offs, landings, and touch-and-goes). CBP proposes to accomplish this, in coordination with the FAA, through the use of Certificates of Authorization (COAs) and Temporary Flight Restrictions (TFRs).

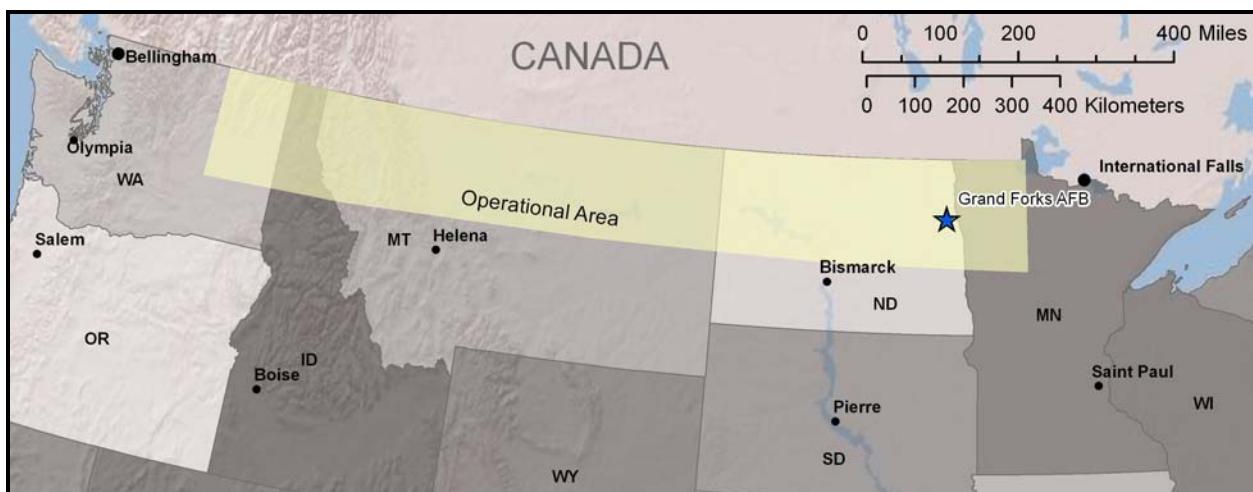
COAs are managed through the FAA's Unmanned Aircraft Program Office. A COA is an authorization issued by the Air Traffic Organization to an operator for a specific unmanned aircraft. After the operator submits a completed application, the FAA conducts a comprehensive operational and technical review of the proposal. If necessary, some limitations may be imposed as part of the approval process to ensure the UAS can operate safely with other airspace users.

Under Title 49 of the CFR (49 CFR § 40103), the FAA has authority to formulate policy regarding the navigable NAS. Title 14 (14 CFR § 91 and 99) contains regulations for addressing TFRs. As defined by FAA Advisory Circular 91-63C, a TFR is a regulatory action issued via the U.S. Notice to Airmen system to restrict certain aircraft from operating within a defined area, on a temporary basis, to protect persons or property in the air or on the ground.

Three separate COAs would be required to allow for the three different types of UAS flight operations. Each of these is described below.

**Transit COA.** The transit COA would be utilized when aircraft are flown between Sierra Vista Airport, Arizona and GFAFB. This operation would include the initial flight to bring the aircraft to GFAFB, maintenance, redeployment and the addition of aircraft to the GFAFB inventory. As an interim measure, CBP A&M, at the request of the FAA, may use chase aircraft to escort Predator B UASs into and out of class A airspace from GFAFB. These aircraft are part of the existing CBP A&M fleet. It is anticipated that the transit COA would be required less than ten times per year.

**Operational COA.** The operational COA would extend along the northern U.S. border encompassing an area approximately 100 miles north to south and 900 miles east to west as shown in Figure 2-2. This would include Class A airspace controlled by the Minneapolis, Salt Lake, and Seattle Air Route Traffic Control Centers (ARTCC). The operating altitude would be at Flight Level (FL) 190 [approximately 19,000 feet above Mean Sea Level (MSL)].



**Figure 2-2. Proposed UAS Operational Area**

Class D controlled airspace currently exists around GFAFB to support USAF aircraft operations. However, it only extends to 3,400 feet MSL. Therefore, approximately 14,600 feet in additional altitude are required to reach Class A airspace (i.e., FL 180 or greater), and no restricted airspace exists above GFAFB. Once in Class A airspace, the Predator B can operate safely and in concert with FAA requirements under Instrument Flight Rules (IFR).

In order to transit to this additional altitude, a TFR would be required for the safety and protection of other aircraft that may be using the same airspace. The TFR would require activation during launch and recovery of Predator B operational missions. CBP would request a TFR activated for 1+30 hours ( $\pm$  45 minutes of scheduled operation time) for each launch and recovery operation. Anticipated nominal launch and/or recovery times are expected to be 7:00 AM local and 7:00 PM local. However, these times could vary depending upon individual mission requirements. UAS missions would be conducted in coordination with the GFAFB tower and airfield operations schedules to minimize risk associated with current and any future fixed wing aircraft operations.

**Training COA.** The training COA would be specifically designed to support UAS pilot proficiency and certification in the immediate vicinity of GFAFB. Operations would be expected to be contained within GFAFB's existing controlled Class D airspace, and conform to established flight procedures currently used at GFAFB. Activities would include closed patterns, low approaches, simulated flame out approaches, touch-and-goes, full stop landings and takeoffs. This COA would also identify lost data-link procedures. The Training COA would be expected to support approximately 100 sorties per year. Training sorties would be approximately two to three hours in duration and would be scheduled to de-conflict with fixed wing operations.

### **2.2.3 Airspace Utilization**

Use of the airspace associated with the proposed COAs and TFR would be mission dependant and would vary, but would not adversely impact the current or future fixed wing capability at GFAFB. Operations under the transit COA would be intermittent and infrequent. The operational COA and its associated TFR would support approximately 500 CBP A&M mission support sorties (1,000 arrivals and departures using the TFR) per year. Mission support sorties are estimated to be twelve to fifteen hours in duration. The Training COA would be expected to support approximately 100 sorties per year. Training sorties would be approximately two to three hours in duration.

## **2.3 ALTERNATIVE 3: ADDITIONAL FACILITIES CONSTRUCTION**

### **2.3.1 Facility Requirements**

The USAF retains first right of usage for Buildings 541 and 600 and could require CBP to vacate the facilities. Should this occur, CBP would be required to construct a new 10,000 square meter facility to house the GCS functions, satellite uplink, and associated personnel and to provide hangar space for the Predator B's. This facility would also require a backup power supply. CBP proposes to construct this hangar in the grassy area at the very south end of the Bravo Ramp (Figure 2-1). The above ground storage tanks (ASTs) currently at this location would be relocated out of the proposed hangar footprint. Implementation of this Alternative would also include all actions as described in Alternative 2.

### **2.3.2 UAS Flight Operations**

UAS flight operations would remain as described in Section 2.2.2.

### **2.3.3 Airspace Utilization**

Airspace utilization would remain as described in Section 2.2.3.

## **2.4 ALTERNATIVES CONSIDERED BUT ELIMINATED FROM FURTHER CONSIDERATION**

In compliance with NEPA and DHS regulations, the DHS must consider reasonable alternatives to the Proposed Action. Only those alternatives determined reasonable to fulfill the purpose and the need for the Proposed Action warrant detailed analysis. The following section presents a summary of alternatives considered but eliminated from further consideration in this EA.

The Proposed Action is to beddown Predator B assets at GFAFB. While CBP A&M is establishing a total of five Air Wings to secure the Northern Border, the availability of UAS aircraft will limit basing those assets to one location in the foreseeable future. Alternative locations considered for the UAS beddown were Bellingham, Washington; Great Falls, Montana; Detroit, Michigan; and Plattsburgh, New York. These locations were considered but not carried forward for analysis in this EA for the following reasons: the limited number of UAV aircraft available in the FY 08-12 timeframe, the centralized location afforded by GFAFB and the available facilities and secure infrastructure at GFAFB. These factors would provide CBP A&M with an optimal location to conduct their initial Northern Border operations. GFAFB's strategic location and proximity to the border along with the synergy of future USAF UAS operations and the opportunity to operate from a non-joint use airfield made GFAFB the ideal location for an initial operational center. As Predator B aircraft become operational, other locations would be separately evaluated for environmental consequences associated with operational beddown decisions.

**Alternate Technologies.** Several project elements that included other technology and infrastructure considerations such as ground sensors and imaging satellites were considered as alternatives to the Proposed Action. However, these alternatives were eliminated from further review due to logistical restrictions and functional deficiencies that fail to meet the purpose and need for this project. These alternatives and reasons for their exclusion from further analysis are described below.

**Remote Sensing Satellites.** Use of remote sensing satellites was eliminated from further evaluation because they present an unacceptable level of reliability and would present extraordinary design, implementation, operation and maintenance considerations that would fail to provide acceptable visual resolution of the border areas under consideration for this project.

**Increased CBP Workforce Alternative.** Another alternative considered during the planning stages of this project was to increase the number of CBP agents to patrol portions of the northern border in lieu of UAS operations. Such efforts would require an enormous commitment of human resources and new facilities would require construction to accommodate the additional manpower necessary to patrol a given area. In addition, UAS operations can effectively occur throughout the night with little to no potential for injury, accident or death to USBP agents. The human resource and vehicular maintenance, coupled with the resulting depletion of resources, represented too great an environmental impact to be further considered as a reasonable alternative. The disadvantages associated with the additional manpower and vehicle requirements coupled with the resulting depletion of resources and ineffective mission completion did not outweigh the advantages of this Alternative. Therefore, this Alternative was eliminated from further consideration.

## **2.5 SUMMARY**

Three alternatives, including the No Action Alternative were selected for analysis in this EA. Both Alternative 2: Proposed Action and Alternative 3: Additional Facilities Construction would meet the stated purpose and need of providing a U.S. CBP A&M Northern Border Operations Center that protects the northern border. The No Action Alternative would not meet the stated purpose and need.

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### **3.0 AFFECTED ENVIRONMENT AND CONSEQUENCES**

#### **3.1 PRELIMINARY IMPACT SCOPING**

This section presents an evaluation of the environmental impacts that could potentially result from the implementation of Alternatives 2 and 3 as compared to Alternative 1: No Action. Potential impacts are addressed in the context of the scope of the Proposed Action as described in Section 2. The extent to which an action might affect an environmental resource depends on many factors. Environmental resources can be affected directly, indirectly, or not at all, and could occur in the short or long-term. Environmental resources could also be affected in terms of context and intensity.

The significance of an action is measured in terms of context and intensity. The context can be analyzed in several ways, such as society as a whole (human, national), the region of influence (ROI), the affected interests, and the locality. Significance might vary with the context of the action.

Intensity refers to the severity of impact. Impacts could be beneficial or adverse. Consideration must be given to whether an impact affects public health or safety, and whether it affects areas having unique characteristics, such as cultural resources or wetlands. The significance of impacts could also depend on the degree of controversy or posing highly uncertain, unique, or unknown risks. Significance can be found where an action sets a precedent for future actions having significant effects, as well as in cases involving cumulative impacts. For example, when considering intensity, consideration must be given to the degree to which the action might adversely affect animal or plant species listed as endangered or threatened or their habitat. Finally, in evaluating intensity, consideration must be given to whether an action threatens a violation of a law or regulation imposed for the protection of the environment. The

environmental resources evaluated as part of this EA include land use, geology and soils, hydrology and groundwater, floodplains, vegetative habitat, wildlife resources, threatened and endangered species, cultural, historical, and archeological resources, air quality, noise, utilities and infrastructure, roadways/traffic, aesthetic and visual resources, hazardous materials, socioeconomic, environmental justice and protection of children, sustainability and greening and human health and safety.

### **3.2 LAND USE**

Land use classifications reflect either natural or human activities occurring at a given location. Land uses resulting from human activities include residential, commercial, industrial, airfield, recreational, agriculture, and other types of developed areas. Natural uses include resource production such as forestry, mining, or agriculture, and resource protection such as conservation areas, wildlands, and parks. Management plans, policies, and regulations define the type and extent of land use allowable in specific areas and protection specially designated for environmentally sensitive areas. The ROI for land use includes land use within the boundaries of GFAFB and land use within a five mile radius of GFAFB.

#### **3.2.1 Affected Environment**

GFAFB occupies 5,422 acres in a rural area near the border of North Dakota and Minnesota. The Base is adjacent to Emerado and within close proximity of the small farming towns of Arvilla and Mekinock. The City of Grand Forks is located approximately 15 miles east of the Base (Figure 1-1).

Land use planning at GFAFB combines efficiency resource utilization with long-term goals and objectives (GFAFB 2006). GFAFB is currently divided into ten land use

categories represented on Figure 3-1. The primary land use at GFAFB is airfield land focused in the vicinity of the runway. Land use east of the runway is categorized as aircraft operations and maintenance, which is tied directly to the airfield land use. The Base contains three primary areas of industrial land use: the civil engineer complex on Tuskegee Airman Blvd, the supply and transportation complex on Eielson Street, and the munitions storage area. A few smaller industrial areas are scattered across the Base.

Land uses in the central portion of the Base include community facilities along Holzapple Street, medical and administrative facilities along Steen Boulevard, and unaccompanied housing. Family housing is located along the eastern side of the Base. The remainder of the facility is occupied with open space and outdoor recreation land uses (GFAFB 2006).

To ensure the Base maintains adequate facilities to support its current and emerging missions, the following land use changes have been proposed and evaluated as part of this EA: expansion at the administrative land use to either side of Steen Boulevard and expansion at the aircraft operation and maintenance land use to create a continuous band west of Eielson Street and east of the parking aprons (Figure 3-2) (GFAFB 2006).

### **3.2.2 Environmental Consequences**

Land use impacts could result if an action displaces an existing use or affects the suitability of an area for its current, designated, or formally planned use. This analysis considers whether the resulting changes improve public safety and well being, and whether they are compatible with surrounding uses and functions. A proposed activity

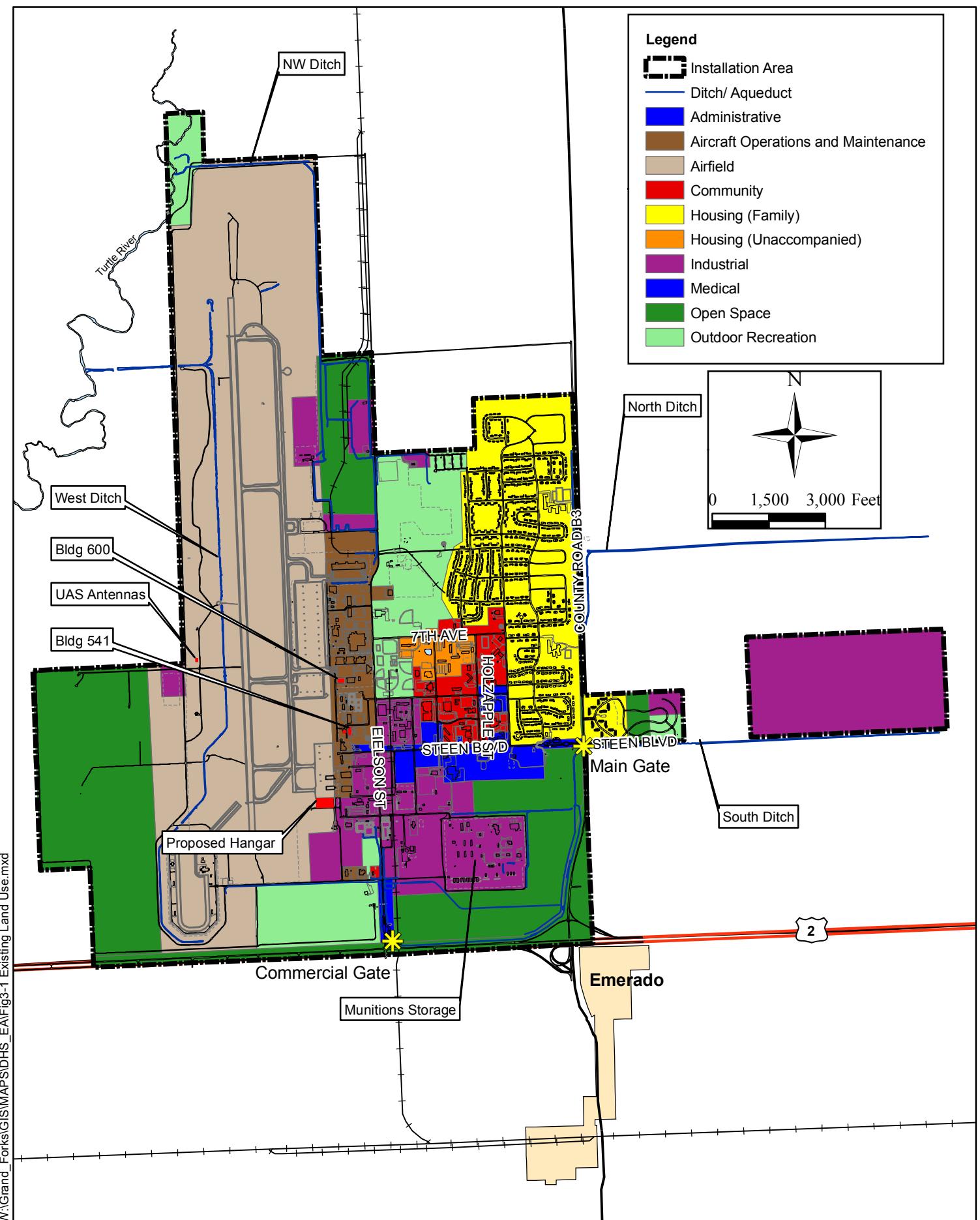


Figure 3-1. Existing Land Use Grand Forks AFB

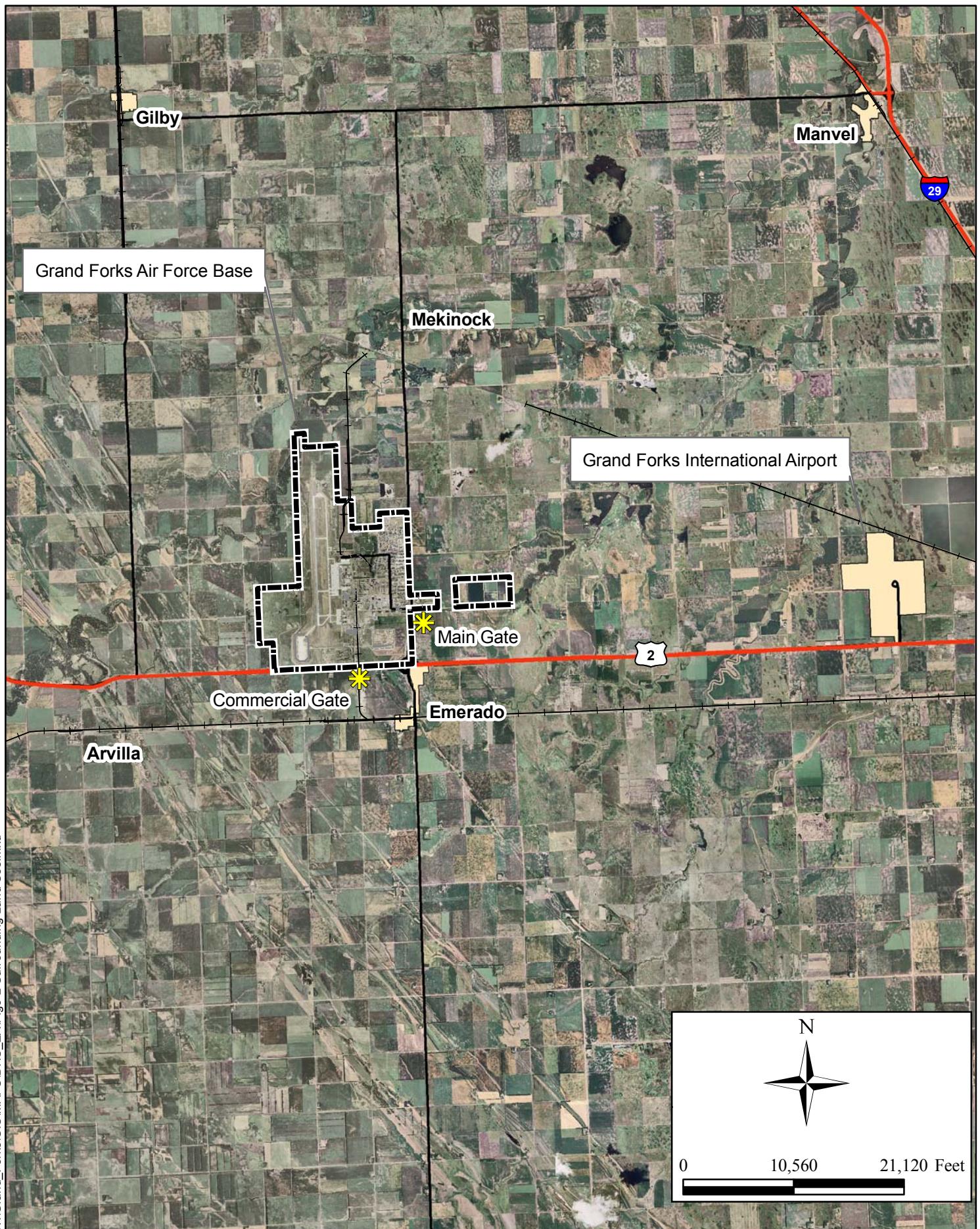


Figure 3-2. Land Use Surrounding Grand Forks AFB

may be incompatible with local plans and regulations that provide for orderly development to protect the general welfare of the public, or conflict with management objectives of a federal or state agency of an affected area. Compatible land use development would need to comply with federal and state environmental laws and regulations. The significance of potential land use impacts is based on the level of land use sensitivity in areas affected by the Proposed Action Alternative and compatibility of the Proposed Action on existing conditions.

Land use surrounding GFAFB consists of agricultural, low density residential and recreational. The town of Emerado is located adjacent to the southeast boundary of GFAFB. The communities of Arvilla and Meckineck are located within five miles of GFAFB. Recreational areas in the vicinity of GFAFB include Turtle River State Park and Kelly's Slough National Wildlife Refuge.

Criteria used to evaluate impacts on land use include:

- Potential to disrupt an existing or planned future land use;
- Potential to reduce the suitability of the surrounding land (land not directly impacted by an action) for its current or planned use;
- Potential for inconsistency with the installation's plans, regulations, and guidelines (including the Air Installation Compatible Use Zone program) that provide for appropriate development of the land; and
- Potential for incompatibility of the action with plans and management objectives for adjacent areas under control of other entities (e.g., state, local, federal).

Projects are evaluated for their potential to affect existing and planned land uses either positively (a beneficial effect), or negatively (a detracting effect).

### **3.2.2.1 Alternative 1: No Action Alternative**

Under the No-Action alternative the status quo would be maintained resulting in no effects to land-use.

### **3.2.2.2 Alternative 2: Proposed Action Alternative**

The Proposed Action would create no negative land use impacts on the Base. Under the Proposed Action, no alterations to current or proposed land uses described in Section 3.2.1 would be necessary. Renovations of existing facilities and additions of flight operations would only affect areas within the aircraft operations and maintenance and airfield land uses and would be consistent with present land uses. The installation of a satellite uplink in order to accommodate the UAS mission is within the airfield land use area. The transfer of 60 personnel to GFAFB would not require additional facilities as the new mission would utilize facilities vacated by the outgoing KC-135R mission. The final portion of the Proposed Action involves flight operations of the UAS and would neither adversely change nor impact land use at GFAFB (Section 3.12 and Section 3.21).

### **3.2.2.3 Alternative 3: Additional Facilities Construction**

Alternative 3 is the construction of a new hangar facility at the south end of the Bravo Ramp on a parcel of land that is currently designated for airfield uses. The construction of this facility would not alter the land use classification for this portion of the airfield and would require the relocation of four ASTs. Impacts to land use outside of GFAFB would be as described in Section 3.2.2.2.

## **3.3 GEOLOGY AND SOILS**

### **3.3.1 Affected Environment**

Earth resources include geology, soils, topography, and minerals. Geological resources of an area typically consist of surface and subsurface materials and their inherent properties. Principal geologic factors influencing the ability to support structural

development are seismic properties, soil stability and topography. The term soils refers to unconsolidated materials overlying bedrock or other parent material. Soils play a critical role in both the natural and human environment. Soil structure, elasticity, strength, shrink-swell potential, and erodibility all determine the ability for the ground to support man-made structures and facilities. Topography is the change in vertical relief over the surface of a land area. An area's topography is influenced by many factors, including human activity, underlying geologic material, seismic activity, climatic conditions, and erosion. The term "minerals" refers to extractable resources.

Earth resources may have scientific, historical, economic, and recreational value. The ROI for earth resources includes portions of GFAFB where construction activities would occur.

GFAFB lies in the Central Lowland physiographic province in the Red River of the North (Red River) Valley. The Base is situated on the flat, featureless glacial Lake Agassiz Plain, which has a northward and eastward slope of about 1.5 to 2 feet per mile (U.S. DOE 1992). Precambrian granite bedrock is overlain by approximately 130 feet of glacial till and 95 feet of lake deposits. The glacial deposits consist mostly of a heterogeneous mixture of silt and clay till with some lenses of sand and gravel (USAF 2006).

Soils underlying the Base are primarily of the Antler-Gilby-Svea, Bearden-Antler, and Glyndon-Gardena associations. The soils of these associations are deep, level to nearly level, and somewhat poorly drained to moderately well-drained, characterized by a high shrink-swell potential, low infiltration rate, and high available water capacity. The soils are moderately fine textured to medium textured. Soil within the area of the Proposed

Action and Alternative 3 is classified as a Gilby Loam. In undisturbed areas this soil would be classified as prime farmland (GFAFB 2006).

### **3.3.2 Environmental Consequences**

Protection of unique geologic features, minimization of soil erosion and the siting of facilities in relation to potential geologic hazards and soil limitations are considered when evaluating impacts to earth resources. Generally, impacts can be avoided or minimized if proper construction techniques, erosion control measures and structural engineering designs are incorporated into project development.

Analysis of potential impacts to geologic resources typically includes identification and description of resources that could potentially be affected, examination of the potential effects that an action may have on the resource, assessment of the significance of potential impacts, and provision of mitigation measures in the event that potentially significant impacts are identified. Analysis of impacts to soil resources resulting from proposed activities examines the suitability of locations for proposed operations and activities. Impacts to soil resources can result from earth disturbance that would expose soil to wind or water erosion.

#### **3.3.2.1 Alternative 1: No Action Alternative**

Under the No-Action Alternative, neither CBP personnel nor any CBP assets would be deployed to GFAFB. Under the No Action Alternative, existing conditions for earth resources at GFAFB would remain unchanged, and there would be no impacts.

### **3.3.2.2 Alternative 2: Proposed Action Alternative**

Two existing facilities at GFAFB (Buildings 541 and 600) would be renovated under the Proposed Action Alternative 2. The proposed renovations to Building 600 would be limited to interior modifications and would have no impact to soil or geologic resources at GFAFB. Renovations to Building 541 would consist primarily of interior renovation; however the installation of a backup generator and a satellite uplink would require installation of underground cables. These cables would be installed under the existing pavement and the disturbance to soils would be limited to an approximately 30 foot long, two foot wide trench. Disturbed areas would be repaved upon completion of trenching and impacts to soil or geologic resources would be minimal. No undisturbed prime farmland is present in the location of the Proposed Action. Therefore, prime farmland soils would not be encountered or impacted under Alternative 2 and no further analysis is warranted.

### **3.3.2.3 Alternative 3: Additional Facilities Construction**

Proposed construction activities would occur at GFAFB in an area already developed and/or previously disturbed by excavation. Relocation of the four ASTs would also occur in developed and/or previously disturbed areas. Changes in runoff or soil loss from construction would be minimal and much of it would be temporary in nature. The total area of disturbed soil for proposed construction would be approximately 2.72 acres (2.47 acres permanently, 0.25 acres temporarily) and would involve minimal displacement of soil. Because of the flat topography on Base and limited erodibility of the soils in the area, soil erosion is expected to be minimal. By using standard construction practices such as stockpiling soil and watering graded areas, in accordance with applicable state and federal guidelines, soil erosion and dust blowing

would be further minimized. No impacts are anticipated to resources outside of the GFAFB installation. No undisturbed prime farmland is present in the location of the proposed construction. Therefore, prime farmland soils would not be encountered or impacted under Alternative 3 and no further analysis is warranted.

### **3.4 HYDROLOGY AND GROUNDWATER**

#### **3.4.1 Affected Environment**

This section describes the groundwater system beneath the proposed renovation areas (Buildings 541 and 600) and proposed construction areas (proposed hangar south of Bravo Ramp and UAS antenna site).

The groundwater system beneath GFAFB consists of a shallow perched unconfined zone and the confined Emerado aquifer (Jacobs 2004). The Emerado aquifer is typically encountered at approximately 60 feet below ground surface (bgs) and represents the shallowest viable source of groundwater. However, its usefulness is limited because of its high dissolved solids, chloride, and sulfate content (Jacobs 2004). Perched groundwater has typically been encountered within the native clay at elevations as high as 2 feet bgs within GFAFB.

Remedial investigations within GFAFB have identified contaminated soils and groundwater within one quarter mile of the proposed construction and renovation areas. However, due to the low permeability and discontinuity of fractures within the shallow soil, significant migration away from source areas in the shallow groundwater aquifer is not anticipated (CH2MHILL 2008). The groundwater in the vicinity of the proposed construction and renovation areas reportedly migrates at a very slow rate (approximately 5 feet per year) (Braun 2008).

### **3.4.2 Environmental Consequences**

Impacts to groundwater would result if the quantity or quality of groundwater was impacted by the Proposed Action or Alternative 3. The ROI for groundwater is the portion of GFAFB potentially impacted by construction activities relating to the Proposed Action or Alternative 3.

#### **3.4.2.1 *Alternative 1: No Action Alternative***

Under this alternative, there would be no change to the current operations at GFAFB. Therefore, conditions within the proposed construction and renovation areas would continue as described in Section 3.4.1.

#### **3.4.2.2 *Alternative 2: Proposed Action Alternative***

Under this alternative, renovation of Buildings 541 and 600 would occur and construction of the UAS antennas (and associated concrete pad) would occur. The building renovations would not involve soil borings or excavations and the concrete pad for the UAS antenna would be slab-on-grade. Therefore, groundwater would not be encountered or impacted under Alternative 2 and no further analysis is warranted.

#### **3.4.2.3 *Alternative 3: Additional Facilities Construction***

Under this alternative, construction of the proposed hangar south of Bravo Ramp would occur. Excavation for the hangar footings may encounter perched groundwater and (based on the information in Section 3.4.1) this groundwater may be contaminated with hazardous substances. If contaminated groundwater is encountered during the hangar construction, it will be managed in accordance with all applicable Federal, state and local laws and USAF regulations, therefore, no additional analysis is warranted.

### **3.5 SURFACE WATERS AND WATERS OF THE U.S.**

Water resources analyzed in this section include surface water quantity and quality. Surface water resources include lakes, rivers, and streams and are important for a variety of reasons, including economic, ecological, recreational, and human health. The ROI for water resources in this EA includes GFAFB and the surface water resources immediately adjacent to GFAFB.

#### **3.5.1 Affected Environment**

GFAFB is located within the 30,100 square mile Red River Basin. Surface water features located in the vicinity of the Base are the Turtle River and Kelly's Slough National Wildlife Refuge (NWR). The Turtle River flows in a northeasterly direction across the northwest corner of the Base (Figure 3-1). It joins the Red River approximately 25 miles northeast of GFAFB. It is designated as a Class II stream by the North Dakota Department of Health (NDDH), which means it may require additional treatment to meet the requirements of drinking water, but can be used for irrigation, propagation of life for resident fish species, and water recreation. Kelly's Slough NWR (Figure 1-1) is an environmentally sensitive area located approximately two miles east and downstream of GFAFB and is located in a tributary to the Turtle River (Figure 1-3).

Underground concrete pipes and catchment basins collect storm water runoff from GFAFB. Runoff is conveyed primarily by four grassy drainage ditches, which are designated the Northwest Ditch, West Ditch, South Ditch and North Ditch. The Northwest Ditch collects surface water runoff from sanitary landfills (now closed and capped), the Base small arms range, and a portion of the airfield and parallel taxiway. The West Ditch collects surface water runoff from the now closed explosive ordnance detonation area, the western perimeter of the Base, and the majority of the airfield

runway and taxiway areas. The South Ditch collects surface water runoff from vehicle maintenance, power production, and fuel storage areas. The North Ditch collects surface water runoff from hangars, selected aircraft maintenance areas, and non-industrial areas (319 CES 2005).

Discharges from the West and Northwest Ditch flow into the Turtle River. Discharges from the east of the Base are conveyed by the South and North Ditch into Kelly's Slough NWR, and subsequently the Turtle River. As the Turtle River merges with the Red River northeast of the Base, all drainage from GFAFB ultimately flows into the Red River. The Red River flows northward forming the border between North Dakota and Minnesota, and eventually empties into Lake Winnipeg, Manitoba, Canada (319 CES 2005).

To manage GFAFB storm water runoff and protect the quality of surface water on and in the vicinity of the Base, GFAFB has been issued a National Pollution Discharge Elimination System (NPDES) general storm water permit. As a part of this permit, GFAFB is required to monitor specific storm water parameters, including oil and grease, total suspended solids, total phosphorus, nitrogen, biochemical oxygen demand, and chemical oxygen demand. To date, discharges from GFAFB have met storm water permit regulations. In addition, each ditch has a control device that is capable of handling an accidental spill by containing the affected waters until the appropriate treatment has been made (319 CES 2005).

GFAFB obtains approximately 15 to 20 percent of its potable water from the Agassiz Water Users Association, whose source is Lake Agassiz beach aquifers. The

remainder is provided by the City of Grand Forks, utilizing the Red River and Red Lake River (319 CES 2005).

There are a total of 196 wetlands present on GFAFB comprising 301 acres, as concluded by wetlands surveys in 2004 (Figure 3-3). The Base is located in the prairie pothole region of North America, causing most of these wetlands to be less than one acre in size. These potholes generally receive the majority of their water from snowmelt runoff in the spring and, secondarily, warm season precipitation. Palustrine wetlands, occupy 251 acres of the total 301 acres. Palustrine wetlands include all non-tidal wetlands dominated by trees, shrubs, emergent vegetation, mosses, or lichens, occupy 251 acres of the total 301 acres. In the northern portion of GFAFB, sewage lagoons, a palustrine emergent/lacustrine wetland covers 47 acres.

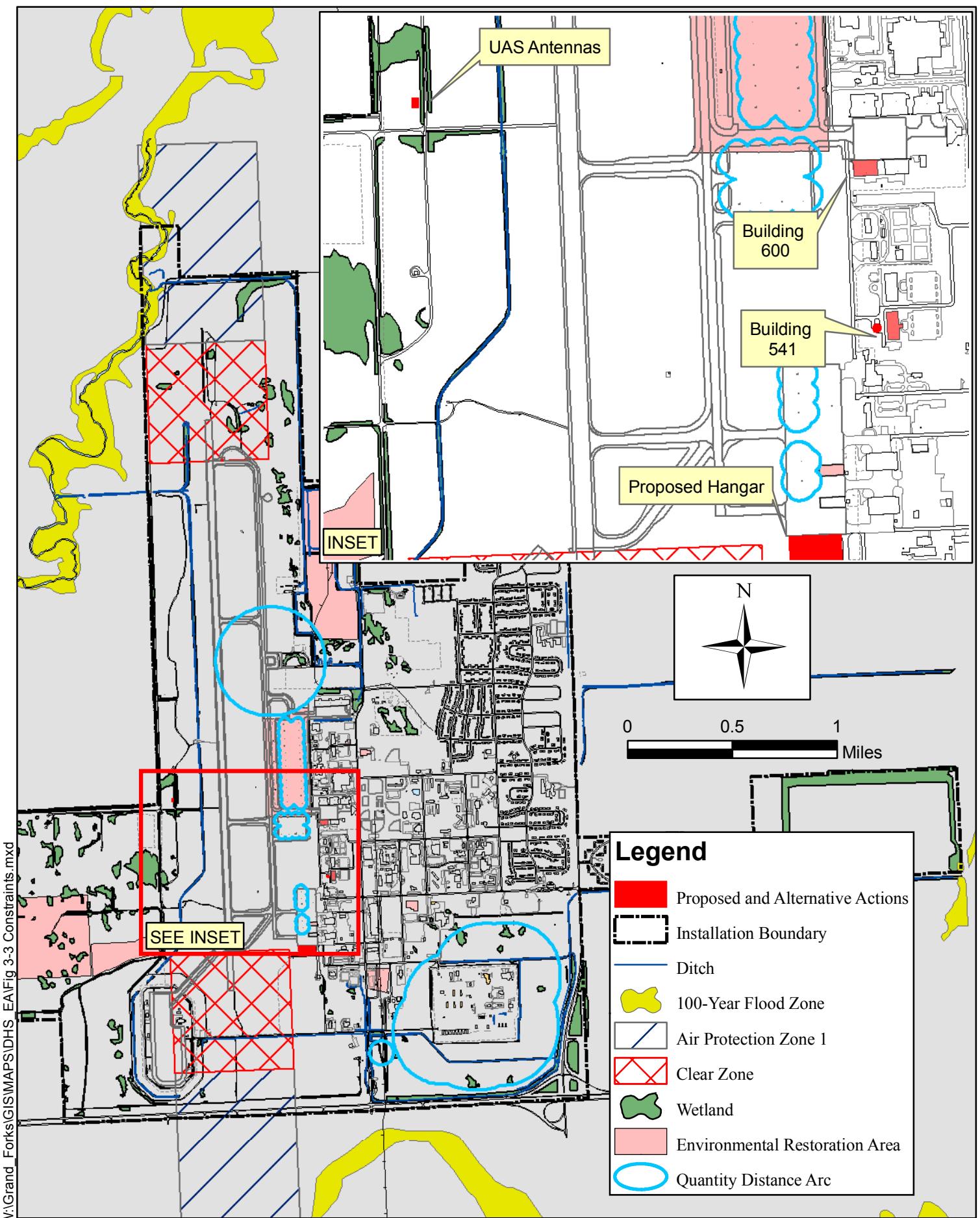


Figure 3-3. GFAFB Project Locations and Constraints

Lacustrine wetlands lack trees, shrubs, persistent emergent vegetation, emergent mosses or lichens. Turtle River, classified as a riverine wetland, runs through the northwest corner of the Base and accounts for the remaining three acres (319 CES 2005).

### **3.5.2 Environmental Consequences**

Section 404 of the Clean Water Act (CWA) established a program to regulate the discharge of dredged and fill material into waters of the U.S., including wetlands. Activities in waters of the U.S. that are regulated under this program include fills for development, water resource projects (such as dams and levees), infrastructure development (such as highways and airports), and conversion of wetlands to uplands for farming and forestry. The federal regulations implementing Section 404 of the CWA define wetlands as:

“those areas that are inundated or saturated by surface or ground water (hydrology) at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation (hydrophytes) typically adapted for life in saturated soil conditions (hydric soils). Wetlands generally include swamps, marshes, bogs, and similar areas.”

EO 11990, *Protection of Wetlands*, requires federal agencies to minimize the destruction, loss, or degradation of wetlands, and to preserve and enhance the natural and beneficial values of wetlands. Wetlands provide a variety of functions including groundwater recharge and discharge; flood attenuation; sediment stabilization; sediment and toxicant retention; nutrient removal and transformation; aquatic and terrestrial diversity and abundance; and aesthetic values. Jurisdictional wetlands are

those subject to regulatory authority under Section 404 of the CWA and EO 11990,  
*Protection of Wetlands.*

Criteria for evaluating impacts related to water resources associated with the Proposed Action and its alternatives are water availability, water quality, and adherence to applicable regulations. Impacts are measured by the potential to reduce water availability to existing users; endanger public health or safety by creating or worsening health hazards or safety conditions; or violate laws or regulations adopted to protect or manage water resources.

The North Dakota State Water Commission and the United States Army Corps of Engineers (USACE) are the regulatory agencies that govern water resources in the State of North Dakota and at GFAFB. These agencies have adopted the United States Environmental Protection Agency's (USEPA's) applicable environmental rules and regulations. The CWA of 1977 regulates pollutant discharges and development activities that could affect aquatic life forms or human health and safety.

Because oils are stored and transferred at GFAFB, the facility falls under the federal regulation for Oil Pollution Prevention, 40 CFR 112. As a part of this regulation, the Base must employ a Spill Prevention, Control and Countermeasure (SPCC) plan, which was signed in May of 1998 and revised in April of 2003. Adhering to the SPCC plan ensures that established procedures, methods, equipment, and other criteria to prevent the discharge of petroleum, into or upon navigable waters, are implemented. Items addressed in the SPCC include containment structure requirements, inspection of storage tanks, personnel training on spill prevention procedures, site security, loading and unloading operations and drainage control (319 CES 2003).

### **3.5.2.1 Alternative 1: No Action Alternative**

Under the No Action Alternative, no construction would occur and no impacts to surface water resources or waters of the U.S. would occur. Conditions would remain as described in Section 3.5.1.

### **3.5.2.2 Alternative 2: Proposed Action Alternative**

With regard to water resources, the primary concerns associated with the Proposed Action Alternatives include effects on surface water quality due to runoff during construction and during the operation of proposed facilities, impacts on surface waters, and effects on the availability of local water supplies.

In addition, the Base has also been issued a NPDES general storm water permit. In order to comply with the requirements of this permit, GFAFB implements Best Management Practices (BMPs) to minimize the potential for contaminants to reach nearby surface waters, and a Storm Water Pollution Prevention Plan (SWPPP) that includes water quality monitoring.

Construction of the two radio antennas would occur in the vicinity of wetlands on the west side of the GFAFB runway. Siting of the towers will be conducted in consultation with the GFAFB Natural Resources Coordinator to ensure that construction does not occur in wetlands or waters of the US. Trenching associated with the installation of the radio towers would be limited to connecting the towers to a nearby power supply. No wetlands or surface waters would be impacted during trenching.

No adverse impacts to water resources on the Base are anticipated from the renovation of Building 541, Building 600 or the construction of the two antenna towers. BMPs and appropriate measures would be strictly adhered too during construction to minimize

erosion and control sedimentation. Construction is not planned within designated wetlands or other waters of the U.S. Further, implementation of the Proposed Action or Alternative 3 is not anticipated to cause additional runoff or adversely impact water resources.

### **3.5.2.3 Alternative 3: Additional Facilities Construction**

With regard to water resources, the primary concerns would be the same as those of the Proposed Action Alternative with the addition of construction. This includes the additional disturbance of approximately 10,000 square meters, as described in Section 2.3.

No adverse impacts to water resources or the potable water supply are anticipated from the additional construction. BMPs and appropriate measures would be strictly adhered to during construction to minimize erosion and control sedimentation.

## **3.6 FLOODPLAINS**

Floodplains are defined by EO 11988, *Floodplain Management* (May 24, 1977), as “the lowland and relatively flat areas adjoining inland and coastal waters including flood-prone areas of offshore islands, including at a minimum, the area subject to a one percent or greater chance of flooding in any given year” (that area inundated by a 100-year flood). Benefits of floodplains include natural attenuation of floods, water quality maintenance, groundwater recharge, as well as habitat for many plant and animal species.

### **3.6.1 Affected Environment**

GFAFB is located in the Turtle River watershed. The 100-year floodplain of the Turtle River and an unnamed tributary occupy only small areas in the northwest and southeast

corners of the Base respectively (Figure 3-3). The Turtle River watershed lies within the Red River Valley, which is part of the larger Red River Basin.

### **3.6.2 Environmental Consequences**

Impacts within floodplains are measured by the potential to endanger public health or safety by creating or worsening health hazards or safety conditions; or violating laws or regulations adopted to protect or manage floodplains.

The North Dakota State Water Commission and Grand Forks County Planning and Zoning Commission are the regulatory agencies that govern floodplains at GFAFB. These agencies have adopted USEPA's applicable environmental rules and regulations. EO 11988, *Floodplain Management* and CWA of 1977 were used as a basis for guidance to determine impacts to the floodplains.

#### **3.6.2.1 Alternative 1: No Action Alternative**

Under the No Action Alternative, no construction would occur and no impacts to floodplain would occur. Conditions would remain as described in Section 3.6.1.

#### **3.6.2.2 Alternative 2: Proposed Action Alternative**

No adverse impacts to the floodplain are anticipated from the implementation of the Proposed Action Alternative. No construction activities would occur within areas designated as 100-year floodplain; therefore, no adverse impacts are anticipated from the implementation of the Proposed Action.

#### **3.6.2.3 Alternative 3: Additional Facilities Construction**

No adverse impacts to the floodplains are anticipated to result from the implementation of Alternative 3. No construction activities would occur within areas designated as 100-

year floodplain. Surface water runoff from this construction is not anticipated to increase input nor change the 100-year flood zone.

### **3.7 VEGETATIVE HABITAT**

#### **3.7.1 Affected Environment**

GFAFB is located in the Red River Valley Section of the Central Lowlands (USFS 1994). The original vegetative community of this area was dominated by tallgrass prairie. The majority of the native vegetation has been converted to agricultural use.

Nearly 60 percent of GFAFB is developed or intensely managed. Vegetation within the improved areas of the Base is associated with lawns, gardens, golf course fairways, ponds and recreation fields. Semi-improved areas include runway borders, the runway infield and approach clear zones. The remaining patches of vegetation are associated with unimproved areas such as woodlands, open space and wetlands.

The dominant vegetation in the improved and semi-improved areas is introduced grass such as smooth bromegrass (*Bromus inermis*), red fescue (*Festuca rubra*) and Kentucky bluegrass (*Poa pratensis*). Trees and shrubs comprise less than five percent of the land cover at GFAFB (GFAFB 2004). A majority of this woody cover consists of shelterbelts that have been planted on portions of the Base to protect housing and other areas from wind, cold and snow. Shelterbelt species include American elm (*Ulmus americana*), green ash (*Fraxinus pennsylvanica*), Russian olive (*Elaeagnus angustifolia*) and cottonwood (*Populus deltoides*). Other woody species present on GFAFB include Eastern red cedar (*Juniperus virginiana*), Norway spruce (*Picea abies*), Austrian pine (*Pinus nigra*), Scotch pine (*Pinus sylvestris*), Ponderosa pine (*Pinus ponderosa*), hackberry (*Celtis occidentalis*) and bur oak (*Quercus macrocarpa*).

According to the Biological Survey Update Report (GFAFB 2004), there are two remnant natural areas located at GFAFB. The Turtle River, located in the northwestern corner of the Base, is ranked S2 by the North Dakota Natural Heritage Program (NDNHP). An S2 rating indicates that the community type is imperiled in the state because of rarity. The Turtle River represents the River/Creek community and is the only natural aquatic community on the Base. The second natural area on the Base is the Lowland Woodland community. This community is a relatively narrow band of trees and shrubs bordering the Turtle River. This NDNHP has classified this area as S2.

No native prairie remnants remain at GFAFB; however the Base has developed the Prairie View Nature Preserve as a native prairie restoration. This 26 acre restoration site, located in a former housing area in the northeast portion of GFAFB, was seeded in 2000 with native prairie seed.

### **3.7.2 Environmental Consequences**

#### **3.7.2.1 Alternative 1: No Action Alternative**

Under the No Action Alternative, no CBP personnel or assets would deploy to GFAFB and no impacts to vegetative resources would occur. Conditions would remain as described above.

#### **3.7.2.2 Alternative 2: Proposed Action Alternative**

Only minimal impacts to vegetation are expected to occur as a result of implementing the Proposed Action Alternative. The portions of the Proposed Action that would have the potential to impact vegetation include the construction of two UAS Antennas, installation of generators and limited trenching near Building 541 for the installation of communication cables. Construction activities would be limited and would occur in

improved or semi-improved areas near the airfield. Vegetation in the improved locations is predominantly maintained grasses such as fescue and Kentucky bluegrass. Vegetation in the semi-improved area is a mix of native and hay species. Upon completion of construction activities, disturbed areas would be reseeded with the appropriate seed mix.

### **3.7.2.3 Alternative 3: Additional Facilities Construction**

Construction of the New CBP UAS Hangar would have additional impacts to vegetative communities but these impacts would be minimal. The location of the proposed hangar is in an improved area of the Base adjacent to the Bravo ramp (Figure 3-4). The area contains ASTs that would be relocated to similar habitat near the proposed construction site. Construction of the proposed hangar and the relocation of the storage tanks would remove approximately 10,000 square meters (107,639 square feet) of vegetation characterized by fescue and Kentucky bluegrass.



**Figure 3-4. View Facing East of the Proposed Hangar Site.**

## **3.8 WILDLIFE RESOURCES**

### **3.8.1 Affected Environment**

According to a biological inventory conducted in 2004, GFAFB supports a diversity of wildlife species. This study compiled a list of 170 birds, 38 species of insects, 31 mammal species, 12 mollusk species and 4 amphibians that were observed within the boundaries of GFAFB (GFAFB 2004).

Birds associated with open water communities such as the sewage lagoons include Canada goose (*Branta canadensis*), great blue heron (*Ardea herodias*), mallard (*Anas platyrhynchos*), blue-winged teal (*Anas discors*), redhead duck (*Aythya americana*), ruddy duck (*Oxyura jamaicensis*) and northern shoveler (*Anas clypeata*). Other common bird species at GFAFB include: cliff swallow (*Petrochelidon pyrrhonota*), barn swallow (*Hirundo rustica*), red-winged blackbird (*Agelaius phoeniceus*), brown-headed cowbird (*Molothrus ater*), Western meadowlark (*Sturnella neglecta*) and mourning dove (*Zenaida macroura*).

Large mammal species commonly found at GFAFB include white-tailed deer (*Odocoileus virginianus*), coyote (*Canis latrans*), bobcat (*Lynx rufus*), beaver (*Castor canadensis*) and badger (*Taxidea taxus*). Other mammals observed on Base include: Richardson's ground squirrels (*Spermophilus richardsonii*), gray squirrel (*Sciurus carolinensis*), deer mouse (*Peromyscus maniculatus*), house mouse (*Mus musculus*) and masked shrew (*Sorex cinereus*). Two bat species, the silver-haired bat (*Lasionycteris noctivagans*) and the red bat (*Lasius borealis*) have been observed at GFAFB. Reptiles observed at GFAFB include the American toad (*Bufo americanus*), common garter snake (*Thamnophis sirtalis*), northern leopard frog (*Rana pipiens*) and painted turtle (*Chrysemys picta*).

### **3.8.2 Environmental Consequences**

#### **3.8.2.1 Alternative 1: No Action Alternative**

Under the No Action Alternative, no CBP personnel or assets would deploy to GFAFB and no impacts to wildlife would occur. Conditions would remain as described in Section 3.8.1.

### **3.8.2.2 Alternative 2: Proposed Action Alternative**

Only minimal impacts to wildlife are expected to occur as a result of implementing the Proposed Action alternative. As discussed in Section 3.7, there is no unique or important wildlife habitat in the vicinity of proposed construction. The maintained grass and semi-improved habitat that would be impacted is abundant throughout GFAFB and the surrounding region and the minimal amount lost would not adversely affect wildlife.

### **3.8.2.3 Alternative 3: Additional Facilities Construction**

Construction of the new CBP UAS Hangar would have additional wildlife impacts but these impacts would also be minimal. The location of the proposed hangar is in an improved area of the Base adjacent to the Bravo ramp. There are no unique wildlife habitats in the vicinity of the proposed construction.

## **3.9 THREATENED AND ENDANGERED SPECIES**

### **3.9.1 Affected Environment**

According to the United States Fish and Wildlife Service (USFWS), there are no federally listed species that have the potential to occur in Grand Forks County, North Dakota (USFWS 2006).

The NDNHP maintains a list of state species of concern. A total of 31 faunal species of concern have been observed at GFAFB (Table 3-1). The list includes 28 bird species, two mammal species and one amphibian. A single floral species of concern was identified during a biological inventory in 2004 (GFAFB 2004).

**Table 3-1. North Dakota Species of Concern Known to Occur at GFAFB, North Dakota**

| Scientific Name                 | Common Name                   | Status | Breeding Habitat (Animals)/Habitat (Plants)   |
|---------------------------------|-------------------------------|--------|---|
| <b>BIRDS</b>                    |                               |        |   |
| <i>Accipiter cooperii</i>       | Cooper's hawk                 | SU     | Brushy, deciduous woodlands, adjoining wood margins along major steams, ravines and escarpments.                                    |
| <i>Ammodramus bairdii</i>       | Baird's sparrow               | SU     | Upland prairies of mixed grass or tall grass.   |
| <i>Ammodramus leconteii</i>     | Le Conte's sparrow            | SU     | Fens. Lowland tracts of tall grass prairie and wet meadows.   |
| <i>Ammodramus nelsoni</i>       | Nelson's sharp-tailed sparrow | SU     | Freshwater marshes and meadows.   |
| <i>Anas acuta</i>               | Northern pintail              | S?     | Freshwater lakes and ponds.   |
| <i>Bartramia longicauda</i>     | Upland sandpiper              | S?     | Grasslands, especially large blocks.  |
| <i>Buteo regalis</i>            | Ferruginous hawk              | SU     | Flat and rolling prairie, grasslands, sagebrush.  |
| <i>Buteo swainsoni</i>          | Swainson's hawk               | SU     | Native prairie or cropland that include thickets of natural tree growth or brush margins of native forested tracts.                 |
| <i>Butorides virescens</i>      | Green heron                   | S3     | In or near woodland borders of streams, oxbows, ponds and lakes.  |
| <i>Caprimulgus vociferous</i>   | Whip-poor-will                | SH     | Woods, especially near fields.  |
| <i>Chlidonias niger</i>         | Black tern                    | S?     | Shallow freshwater marshes with emergent vegetation, including prairie slough, lake margins and occasionally river or island edges. |
| <i>Dendroica pensylvanica</i>   | Chestnut-sided warbler        | S3     | Fairly dense upland thickets of young or second-growth deciduous forest composed of small trees and tall shrubs.                    |
| <i>Dryocopus pileatus</i>       | Pileated woodpecker           | S3     | Late successional stages of coniferous or deciduous forest, also younger forests that have scattered, large, dead trees.            |
| <i>Empidonax alnorum</i>        | Alder flycatcher              | SU     | Low bushes in wet areas, swamps, around marshes, stream sides, near woods.  |
| <i>Haliaeetus leucocephalus</i> | Bald eagle                    | S1     | Lakes and rivers in forested areas.   |
| <i>Lanius ludovicianus</i>      | Loggerhead shrike             | SU     | Open country and dry upland prairie where shrubs and small trees occur.   |
| <i>Larus pipixcan</i>           | Franklin's gull               | S?     | Lakes, marshes, ponds, rivers.  |
| <i>Lophodytes cucullatus</i>    | Hooded merganser              | S3     | Wood bordered rivers and large creeks and adjoining oxbows, with large populations of small fish.                                   |
| <i>Melospiza georgiana</i>      | Swamp sparrow                 | S3     | Fens, particularly those that contain stands of cattail or phragmites and scattered shrubs.   |
| <i>Mergus merganser</i>         | Common merganser              | SH     | Freshwater lakes and flowing rivers.  |

**Table 3-1. North Dakota Species of Concern Known to Occur at GFAFB, North Dakota (Cont'd)**

| Scientific Name                | Common Name                        | Status | Breeding Habitat (Animals)/Habitat (Plants)  |
|--------------------------------|------------------------------------|--------|--|
| <i>Oporornis philadelphia</i>  | Mourning warbler                   | S4     | Disturbed second growth, prefers clearings, mixed-woods forests and stands of aspen-birch.           |
| <i>Seiurus noveboracensis</i>  | Northern waterthrush               | S4     | Brushy bogs, shrub swamps, second-growth swamp forests and wood borders of ponds, lakes and streams. |
| <i>Sialia sialis</i>           | Eastern bluebird                   | SU     | Forest edge, open woodland interspersed with or adjacent to grazed or mowed grasslands.              |
| <i>Sitta canadensis</i>        | Red-breasted nuthatch              | S4     | Coniferous and deciduous forest.   |
| <i>Sterna forsteri</i>         | Forster's tern                     | SU     | Large marshes with extensive areas of emergent vegetation.   |
| <i>Sterna hirundo</i>          | Common tern                        | SU     | Isolated, sparsely vegetated islands in large lakes, reservoirs, shallow impoundments.               |
| <i>Vermivora celata</i>        | Orange-crowned warbler             | S4     | Open woodlands with heavy brush, especially on slopes or near water.                                 |
| <i>Zonotrichia albicollis</i>  | White-throated sparrow             | S3     | Coniferous and mixed forests, with numerous openings with low, dense vegetation.                     |
| <b>MAMMALS</b>                 |                                    |        |  |
| <i>Lynx rufus</i>              | Bobcat                             | SU     | Forests and broken terrain.  |
| <i>Ursus americana</i>         | Black bear                         | SX     | Forested and brushy areas.   |
| <b>AMPHIBIANS</b>              |                                    |        |  |
| <i>Rana pipiens</i>            | Northern leopard frog              | S?     | Usually permanent water. In summer, inhabits wet meadows and fields.                                 |
| <b>PLANTS</b>                  |                                    |        |  |
| <i>Cypripedium parviflorum</i> | Small yellow lady's-slipper orchid | S2S3   | Boggy areas, wet prairies.   |

S1=Critically imperiled, S2=Imperiled, S3=Vulnerable, S4=Apparently Secure, SX=Presume Extirpated, SH=Possibly Extirpated, S?=Unranked, SU=Unrankable

Sources: 319 CES, 2005; Dirk, C.N.G., 2006a; Dirk, C.N.G., 2006b; 319 CES, 2006; Driscoll, 2006

### 3.9.2 Environmental Consequences

#### 3.9.2.1 No Action Alternative

Under the No Action Alternative, no CBP A&M personnel or assets would deploy to GFAFB and no impacts to threatened or endangered species would occur. Conditions would remain as described above.

### **3.9.2.2 Alternative 2: *Proposed Action Alternative***

As described in Section 3.9.1 there are no known federally threatened or endangered species present at GFAFB. In addition, the USFWS has not identified any threatened or endangered species at GFAFB. Therefore, no impacts to threatened or endangered species are anticipated as a result of implementing the Proposed Action. While state listed species are present at GFAFB, suitable habitat for these species generally does not exist in the vicinity of the Proposed Action. Some state-listed grassland species may utilize areas in the vicinity of the proposed antennas on the west side of the airfield. Only minimal construction is proposed in this area and no impacts to state listed species are anticipated as a result of implementing the Proposed Action.

### **3.9.2.3 Alternative 3: *Additional Facilities Construction***

No impacts to federal or state listed species are anticipated as a result of implementing Alternative 3.

## **3.10 CULTURAL, HISTORICAL, AND ARCHEOLOGICAL RESOURCES**

Cultural resources are any prehistoric or historic district, site, building, structure, or object considered important to a culture, subculture, or community for scientific, traditional, religious or other purposes. They include archeological resources, historic architectural resources, and traditional resources. Archeological resources are locations where prehistoric or historic activity measurably altered the earth or produced deposits of physical remains (e.g., arrowheads, bottles). Historic architectural resources include standing buildings and other structures of historic or aesthetic significance. Traditional resources are associated with cultural practices and beliefs of

a living community which are rooted in its history and are important in maintaining the continuing cultural identity of the community.

Historic properties (as defined in 36 CFR 60.4) are significant archeological, architectural, or traditional resources eligible for listing, or listed in, the National Register of Historic Places (NRHP). Historic properties are evaluated for potential adverse impacts from an action, as are significant traditional resources identified by American Indian tribes or other groups. The ROI for cultural resources on GFAFB consists of those portions of the Base that would be directly affected by ground-disturbing activities and building alterations.

### **3.10.1 Affected Environment**

Two archeological surveys have been performed on GFAFB, one of which was a Base-wide survey conducted in compliance with Section 110 of the National Historic Preservation Act (HQ AMC 2008). A total of six archeological sites and six isolated find spots have been recorded as a result of the two surveys. All of the archeological resources identified on GFAFB are located west of the airfield; four of the archeological sites and two of the isolated find spots are located in the northwest portion of the GFAFB near the Turtle River, and the other two sites and four isolates are located in the southwest portion of the base. None of the identified archeological resources are eligible for listing on the NRHP (HQ AMC 2008).

Two possible paleosols have been identified at 60 to 120 centimeters below the surface in the alluvium adjacent to the Turtle River. Although no cultural materials have been identified in these deposits, the areas adjacent to the Turtle River remain archeologically sensitive (HQ AMC 2008). No traditional cultural resources have been

located on GFAFB, and no Native American groups have indicated areas of specific interest.

Construction of GFAFB commenced in 1956, and 195 buildings on the Base were completed during the Cold War era. In 1995, all of the Cold War era buildings on the Base were inventoried and evaluated for their NRHP eligibility based on the Cold War context (HQ AMC 2008). Eight buildings at GFAFB are considered eligible for listing on the NRHP under the Cold War historic context (HQ AMC 2008) (Table 3-2 and Figure 3-4).

**Table 3-2. Facilities Considered Eligible for the National Register of Historic Places**

| Building Number | Original Use  | Construction Date |
|-----------------|---|-------------------|
| 313             | Missile Training Facility                           | 1965              |
| 606             | Minuteman II/III Transfer Building – Hot Cargo Area | 1965              |
| 703             | Missile Storage Igloo – Nuclear Weapons Storage     | 1959              |
| 704             | Missile Storage Igloo – Nuclear Weapons Storage     | 1959              |
| 705             | Missile Storage Igloo – Nuclear Weapons Storage     | 1959              |
| 706             | Missile Storage Igloo – Nuclear Weapons Storage     | 1959              |
| 707             | Missile Storage Igloo – Nuclear Weapons Storage     | 1959              |
| 714             | <i>Checkout and Assembly</i>                        | 1971              |

### **3.10.2 Environmental Consequences**

Impact analysis for cultural resources focuses on assessing whether the Proposed Action or the alternative has the potential to affect cultural resources that are eligible for listing in the NRHP or have traditional significance for American Indian groups. Under Section 106 of the National Historic Preservation Act (NHPA), the proponent of the action is responsible for determining whether any historic properties are located in the area; assessing whether the proposed undertaking would adversely affect the resources, and notifying the State Historic Preservation Officer (SHPO) of any adverse

effects. An adverse effect is any action that may directly or indirectly change the characteristics that make the historic property eligible for listing in the NRHP. If an adverse effect is identified, the federal agency consults with the SHPO and federally-recognized American Indian tribes to develop measures to avoid, minimize, or mitigate the adverse effects of the undertaking.

Direct impacts may occur by:

- physically altering, damaging, or destroying all or part of a resource;
- altering characteristics of the surrounding environment that contribute to the resource's significance;
- introducing visual or audible elements that are out of character with the property or alter its setting; or
- neglecting the resource to the extent that it deteriorates or is destroyed.

Direct impacts can be assessed by identifying the types and locations of proposed activity and determining the exact location of cultural resources that could be affected.

Indirect impacts occur at a greater distance from the project or at a later time, such as project-induced increases in population that can lead to increased use of an area.

The ROI for direct impacts to cultural resources consists of areas that require ground disturbance (e.g., new hangar) and the buildings requiring renovation and alteration. The ROI for indirect impacts to cultural resources primarily consists of the land beneath the airspace previously described.

### **3.10.2.1 Alternative 1: No Action Alternative**

Under the No-Action Alternative, neither CBP personnel nor any CBP assets would be deployed to GFAFB. No airspace management actions or modifications would occur. No impacts to cultural resources are expected under the No Action Alternative. Cultural resources would continue to be managed in compliance with federal law and USAF regulations.

### ***3.10.2.2 Alternative 2: Proposed Action Alternative***

Two buildings (Building 541 and 600) would be directly affected by the Proposed Action. Building 541, which was constructed in 1999, currently houses Squadron Operations and is not eligible for NRHP listing. Building 600, constructed in 1959 during the Cold War is currently used as a maintenance dock. Inventory and significance evaluation have determined that Building 600 is ineligible for the NRHP as a significant property within the Cold War context (HQ AMC 2008).

No changes in noise contours are anticipated with the beddown of UASs. Therefore, there would be no indirect effects on cultural resources due to the airspace management actions or modifications associated with the Proposed Action.

### ***3.10.2.3 Alternative 3: Additional Facilities Construction***

New construction that would occur under this action would have no effect on the eight NRHP-eligible Base facilities (Table 3-2), as they are located well beyond the ROI of the Proposed Action (Figure 3-5). Changes to the viewscape from the construction would have no effect, since these facilities achieved NRHP eligibility based, in part, on their association with an active military installation on which infrastructure changes routinely occur.

New construction would have no effect on archeological resources. Most, or perhaps even all, of the area has been disturbed by prior construction and other USAF activities. Survey of GFAFB has located six archeological sites, none of which are eligible for the NRHP. Furthermore, all six archeological sites lie well outside the area that would be directly affected by construction.

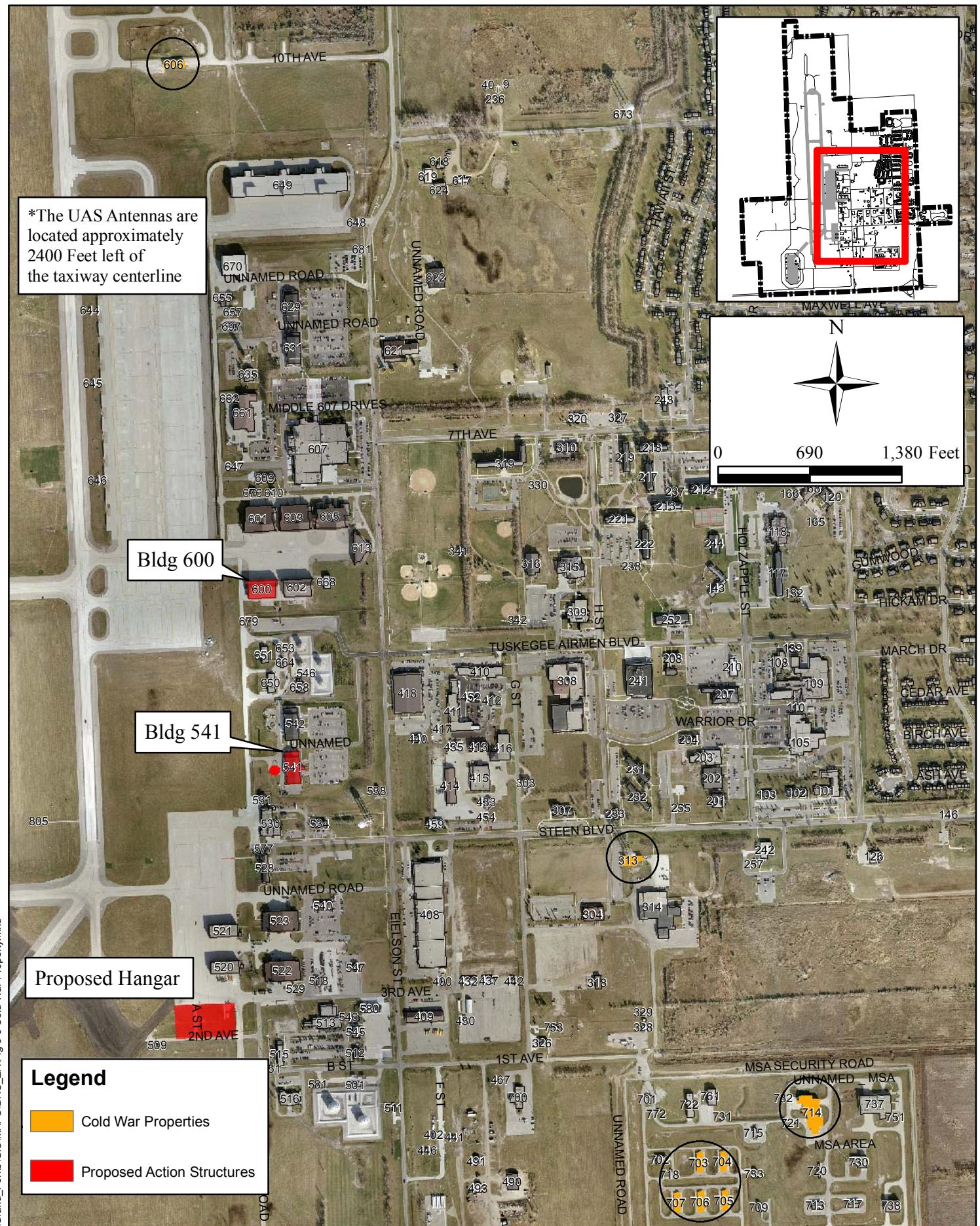


Figure 3-5. Project Locations in Relation to Cold War Historic Properties Grand Forks AFB

There is always the possibility that previously unknown or unrecorded archeological resources can be present beneath the ground surface, sometimes underneath existing development. In the unlikely event that previously unrecorded or unevaluated cultural resources are encountered during construction, CBP would notify GFAFB immediately, who would manage these resources in accordance with the GFAFB Integrated Cultural Resource Management Plan (ICRMP) (HQ AMC 2008), adhering to federal and state laws, as well as USAF regulations.

### **3.11 AIR QUALITY**

#### **3.11.1 Affected Environment**

**Climate.** GFAFB has a humid continental climate that is characterized by a wide temperature range and frequent, drastic weather changes. Temperature ranges from a monthly average of five degrees Fahrenheit in January to a monthly average of 70 degrees Fahrenheit in July. The average annual temperature is 40 degrees Fahrenheit. Summers are short and humid, with May through September being the wettest months of the year. Normal precipitation is approximately 19 inches per year and the Base records an average of 34 thunderstorm days per year. Winters are long with almost continuous snow cover. Snowfall averages 3.5 feet per year. Wind direction is generally from the northwest during the winter and from the southwest during the summer. Average annual wind speed is 10 miles per hour, with maximum winds speeds reaching up to 45 miles per hour in May (NWS 2007, 319 CES 2005).

**Federal Air Quality Standards.** Air quality is determined by the type and concentration of pollutants in the atmosphere, the size and topography of the air basin, and local and regional meteorological influences. The significance of a pollutant concentration in a region or geographical area is determined by comparing it to federal and/or state

ambient air quality standards. Under the authority of the Clean Air Act (CAA), USEPA has established nationwide air quality standards to protect public health and welfare, with an adequate margin of safety.

These federal standards, known as the National Ambient Air Quality Standards (NAAQS), represent the maximum allowable atmospheric concentrations and were developed for six “criteria” pollutants: ozone ( $O_3$ ), nitrogen dioxide ( $NO_2$ ), carbon monoxide (CO), respirable particulate matter less than or equal to 10 micrometers in diameter ( $PM_{10}$ ), particulate matter less than or equal to 2.5 micrometers in diameter ( $PM_{2.5}$ ), sulfur dioxide ( $SO_2$ ), and lead (Pb). The NAAQS are defined in terms of concentration (e.g., parts per million [ppm] or micrograms per cubic meter [ $\mu g/m^3$ ]) determined over various periods of time (averaging periods). Short-term standards (1-hour, 8-hour, or 24-hour periods) were established for pollutants with acute health effects and may not be exceeded more than once a year. Long-term standards (annual periods) were established for pollutants with chronic health effects. The USEPA does not permit these limits to be exceeded over any period of time.

Based on measured ambient criteria pollutant data, the USEPA designates areas of the U.S. as having air quality equal to or better than the NAAQS (attainment) or worse than the NAAQS (nonattainment). Upon achieving attainment, areas are considered to be in maintenance status for a period of ten or more years. Areas are designated as unclassifiable for a pollutant when there is insufficient ambient air quality data for the USEPA to form a basis of attainment status. For the purpose of applying air quality regulations, unclassifiable areas are treated similar to areas that are in attainment of the NAAQS.

**State Air Quality Standards.** Under the CAA, state and local agencies may establish ambient air quality standards (AAQS) and regulations of their own, provided that these are at least as stringent as the federal requirements. The State of North Dakota has AAQS that are identical to the federal standards, with the exception of SO<sub>2</sub>, for which the North Dakota standards are slightly lower. A summary of the NAAQS that apply to the proposed project area is presented in Table 3-3. Primary standards, as depicted in this table, set limits to protect public health, including the health of sensitive populations, such as asthmatics, children and the elderly. Secondary standards set limits to protect public welfare, including protection against decreased visibility, damage to animals, vegetation and buildings.

**Table 3-3 National and North Dakota Ambient Air Quality Standards**

| Air Pollutant                           | Averaging Time                     | NAAQS   |  | North Dakota AAQS  |
|---|------------------------------------|---|--|--|
|   |                                    | Primary   | Secondary                                    |  |
| Carbon Monoxide (CO)                    | 8-hour<br>1-hour                   | 9 ppm (10 µg/m <sup>3</sup> )<br>35 ppm (40 µg/m <sup>3</sup> )                     | ---  | 9 ppm (10 µg/m <sup>3</sup> )<br>35 ppm (40 µg/m <sup>3</sup> )  |
| Nitrogen Dioxide (NO <sub>2</sub> )     | AAM                                | 0.053 ppm (100 µg/m <sup>3</sup> )  | 0.053 ppm (100 µg/m <sup>3</sup> )           | 0.053 ppm (100 µg/m <sup>3</sup> )   |
| Sulfur Dioxide (SO <sub>2</sub> )       | AAM<br>24-hour<br>3-hour<br>1-hour | 0.03 ppm (80 µg/m <sup>3</sup> )<br>0.14 ppm (365 µg/m <sup>3</sup> )<br>---<br>--- | ---  | 0.023 ppm (60 µg/m <sup>3</sup> )<br>0.099 ppm (260 µg/m <sup>3</sup> )<br>---<br>0.273 ppm (715 µg/m <sup>3</sup> ) |
| Particulate Matter (PM <sub>10</sub> )  | 24-hr                              | 150 µg/m <sup>3</sup>   | 150 µg/m <sup>3</sup>                        | 150 µg/m <sup>3</sup>  |
| Particulate Matter (PM <sub>2.5</sub> ) | AAM<br>24-hour                     | 15 µg/m <sup>3</sup><br>65 µg/m <sup>3</sup>  | 15 µg/m <sup>3</sup><br>65 µg/m <sup>3</sup> | 15 µg/m <sup>3</sup><br>65 µg/m <sup>3</sup>   |
| Ozone (O <sub>3</sub> )                 | 1-hour                             | 0.12 ppm  | 0.12 ppm                                     | 0.12 ppm   |
|   | 8-hour                             | 0.08 ppm  | 0.08 ppm                                     | ---  |
| Lead (Pb) & Lead Compounds              | 3-month                            | 1.5 µg/m <sup>3</sup>   | 1.5 µg/m <sup>3</sup>                        | 1.5 µg/m <sup>3</sup>  |

Notes: AAM = Annual Arithmetic Mean; ppm = parts per million; µg/m<sup>3</sup> = micrograms per cubic meter; --- = not applicable.

Source: 40 Code of Federal Regulations 50; NDAC 2005

**State Implementation Plan.** For non-attainment regions, the states are required to develop a State Implementation Plan (SIP) designed to eliminate or reduce the severity and number of NAAQS violations, with an underlying goal to bring state air quality conditions into (and maintain) compliance with the NAAQS by specific deadlines. The SIP is the primary means for the implementation, maintenance and enforcement of the measures needed to attain and maintain the NAAQS in each state.

**Prevention of Significant Deterioration (PSD).** Section 162 of the CAA further established the goal of prevention of significant deterioration (PSD) of air quality in all international parks; national parks which exceeded 6,000 acres; and national wilderness areas and memorial parks which exceeded 5,000 acres if these areas were in existence on August 7, 1977. These areas were defined as mandatory Class I areas, while all other attainment or unclassifiable areas were defined as Class II areas. Under CAA Section 164, states or tribal nations, in addition to the federal government, have the authority to redesignate certain areas as (non-mandatory) PSD Class I areas, e.g., a national park or national wilderness area established after August 7, 1977, which exceeds 10,000 acres.

**Visibility.** CAA Section 169(a) established the additional goal of prevention of further visibility impairment in PSD Class I areas. Visibility impairment is defined as a reduction in the visual range and atmospheric discoloration. Determination of the significance of an activity on visibility in a PSD Class I area is typically associated with evaluation of stationary source contributions.

**PSD Class I Areas.** The nearest PSD Class I areas in North Dakota include Lostwood National Wilderness Area, located approximately 265 miles west of GFAFB near

Kenmare, North Dakota, and Theodore Roosevelt National Park located approximately 430 miles southwest of the Base near Medora, North Dakota. Additional PSD Class 1 areas in the region are located in northwest Minnesota. These include Boundary Waters Canoe Area Wilderness, located approximately 300 miles east of the Base and Voyageurs National Park, located approximately 250 miles east of the Base near International Falls, Minnesota.

The nearest PSD Class I area is approximately 250 miles from the region potentially affected by the Proposed Action. Therefore, the Proposed Action would be unlikely to have a significant impact on any PSD Class I areas.

**General Conformity.** CAA Section 176(c), General Conformity, established certain statutory requirements for federal agencies with proposed federal activities to demonstrate conformity of the proposed activities with each state's SIP for attainment of the NAAQS. Federal activities must not:

- (a) cause or contribute to any new violation;
- (b) increase the frequency or severity of any existing violation; or
- (c) delay timely attainment of any standard, interim emission reductions, or milestones in conformity to a SIP's purpose of eliminating or reducing the severity and number of NAAQS violations or achieving attainment of NAAQS.

General conformity applies only to nonattainment and maintenance areas. If the emissions from a federal action proposed in a nonattainment area exceed annual thresholds identified in the rule, a conformity determination is required of that action. The thresholds become more restrictive as the severity of the nonattainment status of the region increases.

A conformity analysis is not required if the Proposed Action or Alternative Action occurs within an attainment area. Therefore, a conformity analysis is not required, as Grand Forks County is in attainment status for all criteria pollutants.

**Stationary Source Operating Permits.** In North Dakota, the State Department of Health identifies air pollution problems, proposes appropriate regulations, conducts inspections, and reviews permit applications. Title V of the CAA Amendments of 1990 requires states to issue Federal Operating Permits for major stationary sources. A major stationary source in an attainment or maintenance area is a facility (i.e., plant, base, or activity) that emits more than 100 tons per year (TPY) of any one criteria air pollutant, 10 TPY of a hazardous air pollutant (HAP), or 25 TPY of any combination of HAPs. Thresholds are lower for pollutants for which a region is in nonattainment status. The purpose of the permitting rule is to establish regulatory control over large, industrial activities and to monitor their impact upon air quality. North Dakota's Title V program and other air program laws, including licensing (i.e., permitting) are found in North Dakota Administrative Code (NDAC) Title 33, Article 15.

**Current Emissions.** Air emissions at GFAFB include those from stationary and mobile sources as described above. The stationary sources include combustion sources, fuel storage and transfer, and operational sources. The mobile sources include vehicles and aircraft operations. Baseline emissions for the GFAFB are presented in Table 3-4. In this table, nitrogen oxides ( $\text{NO}_x$ ) include  $\text{NO}_2$  and other nitrogen compounds; and sulfur oxides ( $\text{SO}_x$ ) includes  $\text{SO}_2$  and other sulfur compounds. Because volatile organic compounds (VOCs) and  $\text{NO}_x$  are precursors to the formation of  $\text{O}_3$  in the atmosphere, control of these pollutants is the primary method of reducing  $\text{O}_3$  concentrations in the atmosphere.  $\text{PM}_{10}$  includes  $\text{PM}_{2.5}$  and may be used as an upper limit for  $\text{PM}_{2.5}$ .

emissions. GFAFB has been issued the following air permits: T5-F78004 (permit to operate) issued by the NDDH and a CAA Title V air emissions permit.

**Table 3-4. Baseline Emissions at GFAFB, Calendar Year 2005**

|   | Annual Emissions (tons per year) |            |                 |                 |                  |                  |
|---|----------------------------------|------------|-----------------|-----------------|------------------|------------------|
|   | CO                               | VOC        | NO <sub>x</sub> | SO <sub>x</sub> | PM <sub>10</sub> | PM <sub>25</sub> |
| Abrasive Blasting                               | -                                | -          | -               | -               | -                | -                |
| External Combustion                             | 13.99                            | < 1        | 16.49           | < 1             | 1.27             | 1.27             |
| Fire Fighter Training                           | < 1                              | < 1        | < 1             | -               | < 1              | < 1              |
| Fuel Cell Maintenance                           | -                                | < 1        | -               | -               | -                | -                |
| Fuel/Other Storage                              | -                                | 1.64       | -               | -               | -                | -                |
| Fuel Transfer                                   | -                                | < 1        | -               | -               | -                | -                |
| Gasoline Storage and Dispensing                 | -                                | < 1        | -               | -               | -                | -                |
| Miscellaneous Chemicals                         | -                                | < 1        | -               | -               | -                | -                |
| Non-Destructive Inspection Chemicals            | -                                | < 1        | -               | -               | -                | -                |
| Ozone Depleting Substances                      | -                                | < 1        | -               | -               | -                | -                |
| Paint Spray Booths                              | -                                | 1.72       | -               | -               | < 1              | < 1              |
| Pesticide Applications                          | -                                | 1.55       | -               | -               | -                | -                |
| Small Arms Firing                               | < 1                              | -          | -               | -               | -                | -                |
| Solvent Usage                                   | -                                | < 1        | -               | -               | -                | -                |
| Stationary Internal Combustion Engine Equipment | < 1                              | < 1        | 1.73            | < 1             | < 1              | < 1              |
| Surface Coatings                                | -                                | < 1        | -               | -               | -                | -                |
| Welding Operations                              | -                                | -          | -               | -               | < 1              | < 1              |
| Woodworking/Sanding Operations                  | -                                | -          | -               | -               | < 1              | < 1              |
| Synthesized Natural Gas Plant Flare             | < 1                              | < 1        | < 1             | < 1             | < 1              | < 1              |
| <b>TOTAL</b>                                    | <b>15.9</b>                      | <b>9.6</b> | <b>20.5</b>     | <b>0.23</b>     | <b>1.6</b>       | <b>1.6</b>       |

- = not applicable

Source: 319<sup>th</sup> CES 2007

**Regional Air Emissions.** The previous section lists on-Base emissions for GFAFB in Grand Forks County, North Dakota. The NEPA process, however, must also consider impacts from indirect emissions from stationary and mobile sources related to the project, some of which (for example, commuting of new employees to and from the facility) occur outside of the installation. Federal regulations contained in 40 CFR 81

delineate certain AQCRs, which were originally designated based on population and topographic criteria closely approximating each air basin. The potential influence of emissions on regional air quality would typically be confined to the air basin in which the emissions occur. Therefore, the ROI for the Proposed Action is the AQCR 172. This region includes all of the State of North Dakota, except for Cass County (40 CFR 81).

For comparison purposes, Table 3-5 lists county-wide emissions for Grand Forks County, North Dakota, and for AQCR 172 (which includes Grand Forks County), as compiled by the USEPA in its National Emissions Inventory (NEI) (USEPA 2007). The NEI was updated in 2005, however, the 2002 NEI is provided as the 2005 NEI Version 1 is a reduced effort version based on the 2002 NEI Version 3 (USEPA 2008). The 2002 NEI contains estimates of annual emissions for stationary and mobile sources of air pollutants in each county, on an annual basis.

**Table 3-5. Air Emissions Inventory Grand Forks County, North Dakota, and AQCR 172 for Calendar Year 2002**

|                               | Pollutants (In Tons per Year) |        |         |                 |                  |
|-------------------------------|-------------------------------|--------|---------|-----------------|------------------|
|                               | CO                            | VOC    | NOx     | SO <sub>2</sub> | PM <sub>10</sub> |
| <b>Grand Forks County, ND</b> |                               |        |         |                 |                  |
| Stationary Sources            | 2,738                         | 1,075  | 3,608   | 11,323          | 16,011           |
| Mobile Sources                | 21,795                        | 1,516  | 3,422   | 224             | 245              |
| <b>AQCR 172</b>               |                               |        |         |                 |                  |
| Stationary Sources            | 40,877                        | 14,416 | 115,651 | 249,688         | 383,667          |
| Mobile Sources                | 264,725                       | 23,504 | 78,515  | 6,104           | 5,679            |

Source: USEPA 2007

### **3.11.2 Environmental Consequences**

Air emissions resulting from the Proposed Action were evaluated in accordance with federal, state, and local air pollution standards and regulations. Air quality impacts from the Proposed Action would be significant only if they:

- Increase ambient air pollution concentrations above any NAAQS;
- Contribute to an existing violation of any NAAQS;
- Interfere with or delay timely attainment of NAAQS; or
- Impair visibility within any federally mandated Federal Class I area.

The approach to the air quality analysis was to estimate the increase in emission levels due to implementation of the Proposed Action.

### **3.11.2.1 Alternative 1: No Action Alternative**

Under the No Action Alternative, no construction activity would occur and operational emissions would be identical to the current baseline presented in Table 3-4.

### **3.11.2.2 Alternative 2: Proposed Action**

**Construction Emissions.** The Proposed Action would involve construction emissions associated with the construction of two 20-foot towers and renovations to Buildings 541 and 600. The commuting of construction personnel and transport of materials to and from the site during the construction period would also contribute to construction emissions. The emission factors for the Proposed Action include contributions from engine exhaust emissions (i.e., construction equipment, material handling and workers' travel). Emissions from these activities would be minimal, short-term and would end when construction is complete. Emissions relating to the increase in personnel would be minimal and are not anticipated to cause a net increase in emissions in AQCR 172. Decreases in personnel due to BRAC realignments would result in a decrease of transportation related emission in the vicinity of GFAFB. No adverse or long-term impacts to air quality are expected in Grand Forks County or AQCR 172.

**Operational Emissions.** The primary source of operational emissions upon implementation of the Proposed Action would be from engine exhaust emissions from UAS flight operations. Emissions produced by the Predator B, however, would be minimal and less than those produced by the KC-135R aircraft that the Predators would replace.

Other operational emissions produced would be from the backup power supply to be installed for use by Building 541. Emissions from this generator would be minimal and intermittent. A negligible amount of emissions would also be produced by a backup small generator near the two 20-foot towers, when in operation.

The existing Title V permit would require modification to include emissions from generator use and the gasoline storage tanks for these generators would be added to the insignificant air inventory by the base permit. It is anticipated that these generators would run for less than ten hours per year. It is expected that the operational emissions from these activities would not result in any long-term impacts on the air quality in Grand Forks County or AQCR 172.

**Mobile Emissions.** Transportation related emissions would also occur with the influx of 60 CPB personnel and their families. However, because this influx is planned to occur over a four year period, no adverse impacts to air quality are anticipated.

### **3.11.2.3 Alternative 3: Additional Facilities Construction**

**Construction Emissions.** Alternative 3 would involve emissions associated with the construction of a new facility for administrative use and hangar space rather than renovations to existing buildings. The commuting of construction personnel and

transport of materials to and from the site during the construction period would also contribute to construction emissions.

The emission factors would be similar to those of the Proposed Action including engine exhaust emissions from construction equipment, material handling and workers' travel. As in the Proposed Action, emissions from these activities would be minimal, short-term and would end when construction is complete. No adverse or long-term impacts to air quality are expected in Grand Forks County or AQCR 172.

**Operational Emissions.** Operational emissions for the alternative would be similar to those of the Proposed Action. The existing Title V permit would require an update to include emissions from the proposed generator use. It is expected that the operational emissions from these activities would not result in any long-term impacts on the air quality in Grand Forks County or AQCR 172.

**Mobile Emissions.** Transportation related emissions would also occur with the influx of 60 CPB personnel and their families. These emissions would be the same as those described in Section 3.11.2.2

### **3.12 NOISE**

Noise addressed in this EA focuses on sound levels resulting from aircraft operating within and around GFAFB, and its effects on the surrounding areas subject to aircraft overflight. This section summarizes baseline noise conditions in the region around GFAFB. In Section 3.12.2, changes to the acoustic environment in the region resulting from the transfer of KC-135R aircraft, deployment of UAS Predator B aircraft and noise resulting from construction activities are addressed.

Noise is considered to be unwanted sound that interferes with normal activities or otherwise diminishes the quality of the environment. It may be intermittent or continuous, steady or impulsive. It may be stationary or transient. Stationary sources are normally related to specific land uses (e.g., housing tracts or industrial plants). Transient noise sources move through the environment, either along relatively established paths (e.g., highways, railroads, and aircraft flight tracks around airports), or randomly. There is wide diversity in responses to noise that not only vary according to the type of noise and the characteristics of the sound source, but also according to the sensitivity and expectations of the receptor, the time of day, and the distance between the noise source (e.g., an aircraft) and the receptor (e.g., a person or animal).

The physical characteristics of noise, or sound, include its intensity, frequency, and duration. Sound is created by acoustic energy, which produces minute pressure waves that travel through a medium, like air, and are sensed by the ear drum. This may be likened to the ripples in water that would be produced when a stone is dropped into it. As the acoustic energy increases, the intensity or amplitude of these pressure waves increase, and the ear senses louder noise. The unit used to measure the intensity of sound is the decibel (dB). Sound intensity varies widely (from a soft whisper to a jet engine) and is measured on a logarithmic scale to accommodate this wide range. The logarithm, and its use, is nothing more than a mathematical tool that simplifies dealing with very large and very small numbers. For example, the logarithm of the number 1,000,000 is 6, and the logarithm of the number 0.000001 is -6 (minus 6). Obviously, as more zeros are added before or after the decimal point, converting these numbers to their logarithms greatly simplifies calculations that use these numbers.

The frequency of sound is measured in cycles per second, or hertz (Hz). This measurement reflects the number of times per second the air vibrates from the acoustic energy. Low frequency sounds are heard as rumbles or roars, and high frequency sounds are heard as screeches. Sound measurement is further refined through the use of “A-weighting.” The normal human ear can detect sounds that range in frequency from about 20 Hz to 15,000 Hz. However, all sounds throughout this range are not heard equally well. Therefore, through internal electronic circuitry, some sound meters are calibrated to emphasize frequencies in the 1,000 to 4,000 Hz range. The human ear is most sensitive to frequencies in this range, and sounds measured with these instruments are termed “A-weighted,” and are shown in terms of A-weighted decibels (dBA).

The duration of a noise event, and the number of times noise events occur, are also important considerations in assessing noise impacts.

As a basis for comparison when noise levels are considered, it is useful to note that at distances of about 3 feet, noise from normal human speech ranges from 63 to 65 dB, operating kitchen appliances range from about 83 to 88 dB, and rock bands approach 110 dB.

The word “metric” is used to describe a standard of measurement. As used in environmental noise analysis, there are many different types of noise metrics. Each metric has a different physical meaning or interpretation and each metric was developed by researchers attempting to represent the effects of environmental noise.

The metrics supporting the assessment of noise from aircraft operations and other activities on and around GFAFB are the maximum sound level ( $L_{max}$ ), the Sound

Exposure Level (SEL), and Time-Averaged Sound Levels. Each metric represents a “tier” for quantifying the noise environment, and is briefly discussed below.

The following terms are defined to provide a better understanding of how data are developed for input to the various noise models used to calculate noise.

Around an airfield, aircraft operations are categorized as takeoffs, landings, or closed patterns (which could include activities referred to as touch-and-gos or low approaches).

These operations normally follow well-defined tracks. Each takeoff or landing constitutes one operation. A closed pattern occurs when the pilot of the aircraft approaches the runway as though planning to land, but then applies power to the aircraft and continues to fly as though taking off again. The pilot then flies a circular or rectangular track around the airfield, and again approaches for landing. In some cases the pilot may actually land on the runway before applying power, or in other cases the pilot simply approaches very close to the ground. In either event, since a closed pattern operation essentially consists of a landing and a takeoff, it is considered two operations.

The number of times noise events occur during given periods is also an important consideration in assessing noise impacts. The “cumulative” noise metric supporting the analysis of multiple time-varying noise events is the Day-Night Average Sound Level ( $L_{dn}$ ).

The  $L_{dn}$  metric sums the individual noise events and averages the resulting level over a specified length of time. Thus, it is a composite metric which considers the maximum noise levels, the duration of the events, the number of events that occur, and the time of day during which they occur. This metric adds 10 dB to those events that occur between 10:00 PM and 7:00 AM to account for the increased intrusiveness of noise events that

occur at night when ambient noise levels are normally lower than during the day time. This cumulative metric does not represent the variations in the sound level heard. Nevertheless, it does provide an excellent measure for comparing environmental noise exposures when there are multiple noise events to be considered.

**Maximum Sound Level.** The  $L_{max}$  metric defines peak noise levels.  $L_{max}$  is the highest sound level measured during a single noise event (e.g., an aircraft overflight), and is the sound actually heard by a person on the ground. For an observer, the noise level starts at the ambient noise level, rises up to the maximum level as the aircraft flies closest to the observer, and returns to the ambient level as the aircraft recedes into the distance. Maximum sound level is important in judging a noise event's interference with conversation, sleep, or other common activities.

The primary aircraft currently operating at GFAFB is the KC-135R, constituting approximately 96 percent of the operations at the installation. Around airfields, the primary operational modes of aircraft are departures (take-offs) and arrivals (landings).

Table 3-6 shows  $L_{max}$  values at various distances associated with the KC-135R.

**Table 3-6. Representative Maximum Sound Levels**

| <b>Aircraft and Power Type</b> | <b><math>L_{max}</math> Values (in dBA) at Varying Distances (in Feet)</b> |              |              |              |               |
|--------------------------------|--|--------------|--------------|--------------|---------------|
|                                | <b>500</b>   | <b>1,000</b> | <b>2,000</b> | <b>5,000</b> | <b>10,000</b> |
| KC-135R Takeoff                | 93.9   | 87.1         | 79.8         | 68.9         | 59.1          |
| KC-135R Landing                | 90.4   | 83.4         | 75.8         | 64.4         | 54.2          |

Source: OMEGA108

**Sound Exposure Level.**  $L_{max}$  alone may not represent how intrusive an aircraft noise event is because it does not consider the length of time that the noise persists. The SEL metric combines intensity and duration into a single measure. It is important to note, that SEL does not directly represent the sound level heard at any given time, but rather provides a measure of the total exposure of the entire event. Its value represents all of the acoustic energy associated with the event as though it was present for one

second. Therefore, for sound events that last longer than one second, the SEL value would be higher than the  $L_{max}$  value. The SEL value is important because it is the value used to calculate other time-averaged noise metrics. Table 3-7 shows SEL values corresponding to the aircraft and power settings reflected in Table 3-6.

**Table 3-7. Representative Sound Exposure Levels**

| <b>Aircraft and Power Type</b> | <b>SEL Values (in dBA) at Varying Distances (in Feet)</b> |              |              |              |               |
|--------------------------------|---|--------------|--------------|--------------|---------------|
|                                | <b>500</b>  | <b>1,000</b> | <b>2,000</b> | <b>5,000</b> | <b>10,000</b> |
| KC-135R Takeoff                | 97.2  | 92.2         | 86.7         | 78.2         | 70.2          |
| KC-135R Landing                | 96.0  | 90.8         | 85.0         | 76.0         | 67.6          |

Source: OMEGA108

**Time-Averaged Cumulative Noise Metrics.** The number of times noise events occur during given periods is also an important consideration in assessing noise impacts. The “cumulative” noise metrics supporting the analysis of multiple time-varying noise events are the  $L_{dn}$  and the Equivalent Noise Level ( $L_{eq}$ ).

**Day-Night Average Sound Level ( $L_{dn}$ ).** This metric sums the individual noise events and averages the resulting level over a specified length of time. Thus, it is a composite metric which considers the maximum noise levels, the duration of the events, the number of events that occur, and the time of day during which they occur. This metric adds 10 dB to those events that occur between 10:00 PM and 7:00 AM to account for the increased intrusiveness of noise events that occur at night when ambient noise levels are normally lower than during the day time. This cumulative metric does not represent the variations in the sound level heard. Nevertheless, it does provide an excellent measure for comparing environmental noise exposures when there are multiple noise events to be considered.

**Equivalent Noise Level.** This metric, also sums all of the individual noise events and averages them over a specified time period. Common averaging times are 8- and 24-hour periods [ $L_{eq(8)}$  and  $L_{eq(24)}$ ]. This metric assigns no penalty for the time of the noise

event. However, if no noise events occur at night, calculations of  $L_{dn}$  and  $L_{eq}$  would be identical for a 24-hour period.

Finally, it should be noted that ambient background noise is not considered in the noise calculations that are presented below. There are two reasons for this. First ambient background noise, even in wilderness areas, varies widely depending on location and other conditions. For example, studies conducted in an open pine forest in the Sierra National Forest in California have measured up to a 10 dBA variance in sound levels simply due to an increase in wind velocity (Harrison 1973). Therefore, assigning a value to background noise would be arbitrary. Secondly, and probably most important, is that it is reasonable to assume that ambient background noise in the project's ROI would have little or no effect on the calculated average noise level. In calculating noise levels louder sounds dominate the calculations and in general, aircraft and other transportation-related noise would be expected to be the dominant noise sources characterizing the acoustic conditions in the ROI.

Using measured sound levels as a basis, the USAF and the U.S. Department of Transportation, Federal Highway Administration have developed several computer programs to calculate noise levels resulting from aircraft operations and construction / demolition activities. Sound levels calculated by these programs have been extensively validated against measured data, and have been proven to be highly accurate.

In this document, the sound levels calculated for aircraft operations in an airfield environment are all daily  $L_{dn}$ .  $L_{dn}$  metrics are the preferred noise metrics of the Department of Housing and Urban Development, the Department of Transportation, the FAA, the USEPA, and the Veteran's Administration.

Ignoring the night-time penalty for the moment,  $L_{dn}$  may be thought of as the continuous or cumulative A-weighted sound level which would be present if all of the variations in sound level which occur over the given time period were smoothed out so as to contain the same total sound energy. While  $L_{dn}$  does provide a single measure of overall noise impact, it is fully recognized that it does not provide specific information on the number of noise events or the specific individual sound levels that occur. For example, an  $L_{dn}$  of 65 dB could result from a very few noisy events, or a large number of quieter events. Although it does not represent the sound level heard at any one particular time, it does represent the total sound exposure. Scientific studies and social surveys have found the  $L_{dn}$  to be the best measure to assess levels of community annoyance associated with all types of environmental noise. Therefore, its use is endorsed by the scientific community and governmental agencies (American National Standards Institute 1980, 1988; USEPA 1974; Federal Interagency Commission on Urban Noise 1980; Federal Interagency Commission on Noise 1992).

Since construction activities are not expected to occur after 10:00 PM, sound levels are calculated using the  $L_{eq}$  metric.

### **3.12.1 Affected Environment**

Public annoyance is the most common concern associated with exposure to elevated noise levels. When subjected to  $L_{dn}$  levels of 65 dBA, approximately 12 percent of the persons so exposed will be “highly annoyed” by the noise. At levels below 55 dBA, the percentage of annoyance is significantly lower (less than 3 percent), and at levels above 70 dBA, it is significantly higher (greater than 25 percent) (Finegold et al., 1994). Table 3-8 shows the percentage of the population expected to be highly annoyed at a range of noise levels.

**Table 3-8. Percentage of Population Highly Annoyed By Elevated Noise Levels**

| Noise Exposure ( $L_{dn}$ in dBA) | Percent Highly Annoyed |
|-----------------------------------|------------------------|
| < 65                              | < 12                   |
| 65 – 70                           | 12 – 21                |
| 70 – 75                           | 22 – 36                |
| 75 – 80                           | 37 – 53                |
| 80 – 85                           | 54 – 70                |
| > 85                              | > 71                   |

Source: Finegold et al. 1994

**3.12.1.1 Aircraft Activity at the Airfield**

Under the most recent noise study accomplished at GFAFB, military aircraft (based and transient) were the most prominent sources of noise. There were a small number of civil aircraft operations. GFAFB supported approximately 193 daily operations. Considering all types of flight activities, a scenario representing an “average day’s” operations was developed. The operations considered include arrivals (landings), departures (takeoffs), and closed patterns. Noise calculations consider the frequency of flight operations, runway utilization, and the flight tracks and flight profiles flown by each aircraft. The numbers and types of representative operations considered are shown in Table 3-9.

**Table 3-9. Average Daily Operations at GFAFB<sup>1</sup>**

| Aircraft       | ARRIVALS      |              | DEPARTURES    |              | OPERATIONS WITHIN CLOSED PATTERNS <sup>2</sup> |               |
|----------------|---------------|--------------|---------------|--------------|--|---------------|
|                | Day           | Night        | Day           | Night        | Day  | Night         |
| KC-135R        | 9.000         | 1.000        | 9.800         | 0.200        | 148.500  | 16.500        |
| Other Military | 0.960         | 0.049        | 0.965         | 0.044        | 0  | 0             |
| Civil          | 2.000         | 0            | 2.000         | 0            | 2.000  | 0             |
| <b>Total</b>   | <b>11.960</b> | <b>1.049</b> | <b>12.765</b> | <b>0.244</b> | <b>150.500</b>                                 | <b>16.500</b> |

<sup>1</sup> Daily operations are based on averages of annual operations; therefore, numbers are not rounded.<sup>2</sup> Since closed patterns consist of a landing and a takeoff (two aviation operations), the 167 aviation operations within closed patterns equate to 83.5 closed patterns

Source: AFCEE 2003

These levels and types of activities are then combined with information on climatology, maintenance activities, and aircraft flight parameters, and processed through the USAF's noise computer models (BASEOPS/NOISEMAP) to calculate  $L_{dn}$  (Lee and Mohlman, 1990; Moulton, 1990). Once noise levels are calculated, they are plotted on a background map in 5-dB increments from 65 dBA to 80 dBA, as applicable, using the

Air Force's NMPLLOT program (Wasmer and Mausell 2008). Noise contours associated with current activities at GFAFB are shown in Figure 3-6. The land areas (in acres) encompassed by each contour under current conditions is compared with exposure under the Proposed Action, and is reflected in Table 3-10.

**Table 3-10. Land Area Exposed To Indicated Sound Levels**

| <b>Sound Level (<math>L_{dn}</math>)</b> | <b>Existing Conditions (Acres)</b> | <b>Proposed Action (Acres)</b> |
|--|------------------------------------|--------------------------------|
| 65 – 70                                  | 1,103.10                           | 730.14                         |
| 70 – 75                                  | 650.40                             | 293.51                         |
| 75 – 80                                  | 258.50                             | 221.11                         |
| 80 – 85                                  | 163.40                             | 120.53                         |
| > 85                                     | 13.70                              | 8.51                           |
| Total area exposed to >65 dB<br>$L_{dn}$ | <b>2,189.10</b>                    | <b>1,373.80</b>                |

Source: Wasmer and Mausell, 2008

In order to further assess noise exposure from aviation activity, several locations around the Base were selected for specific analysis. These locations included a sampling of points on and off GFAFB where land uses could be considered sensitive to elevated noise levels. Noise exposures at these points are shown in Table 3-11 and are shown with the noise contours in Figure 3-6.

**Table 3-11. Specific Point Noise Exposure Under Current and Proposed Conditions**

| <b>Point ID</b> | <b>Description</b>                 | <b>Exposure (In <math>L_{dn}</math>)</b> |                        | <b>Change (<math>L_{dn}</math>)</b> |
|-----------------|------------------------------------|--|------------------------|-------------------------------------|
|                 |                                    | <b>Current</b>                           | <b>Proposed Action</b> |                                     |
| COMM            |                                    | 52.8                                     | 49.4                   | - 3.4                               |
| DORM            |                                    | 56.6                                     | 52.2                   | - 4.4                               |
| GOLF            |                                    | 68.1                                     | 64.5                   | - 3.6                               |
| POI1            | Nathan Twining Elementary School   | 45.0                                     | 42.5                   | - 2.5                               |
| POI2            | Carl Ben Eielson Elementary School | 45.9                                     | 42.6                   | - 3.3                               |
| POI3            | Ascension Lutheran Church          | 43.1                                     | 40.3                   | - 2.8                               |
| POI4            | Gilby Presbyterian Church          | 37.3                                     | 36.5                   | - 0.8                               |

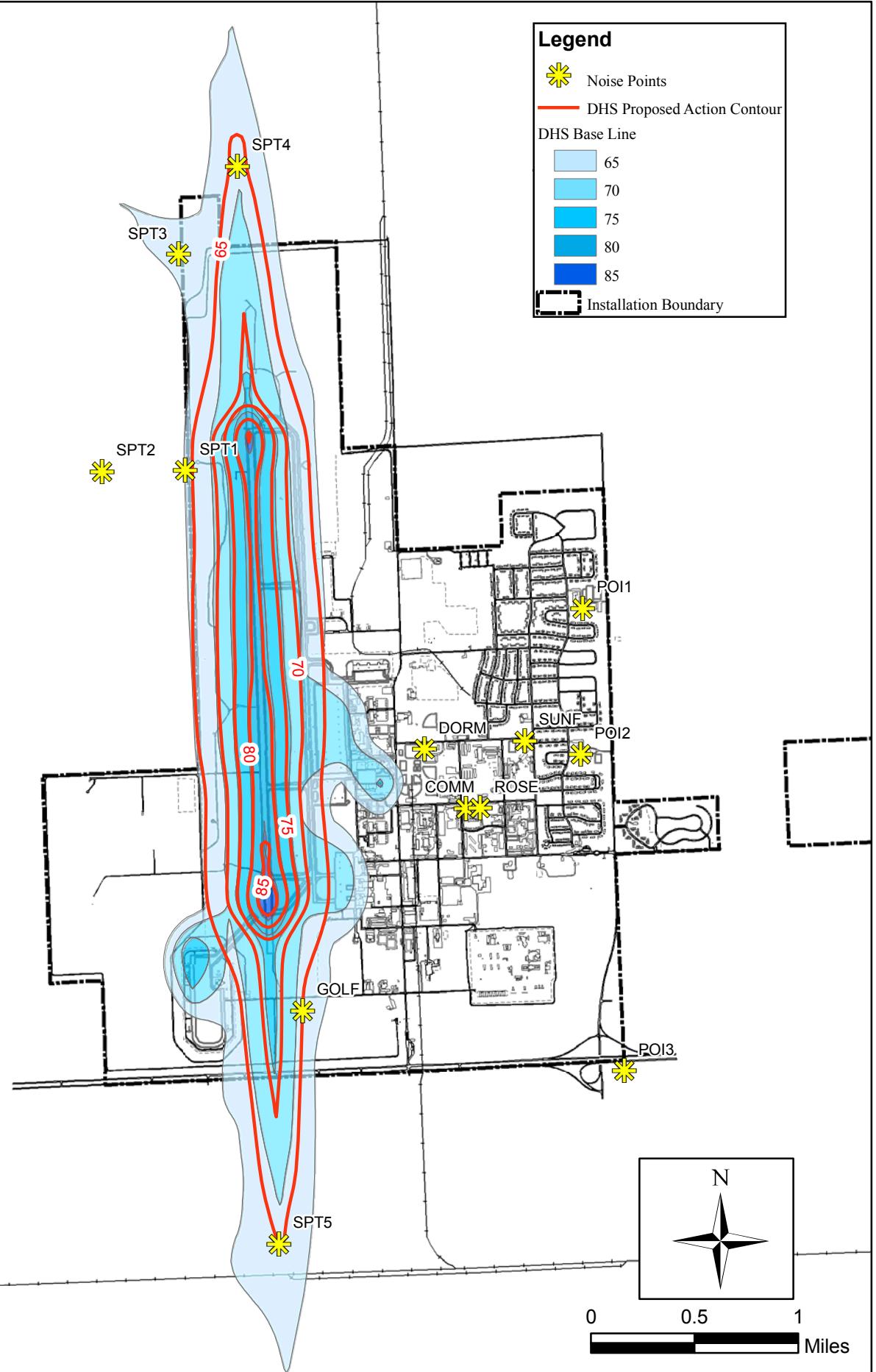


Figure 3-6. Grand Forks AFB Noise Contours

**Table 3-11. Specific Point Noise Exposure Under Current and Proposed Conditions (Cont'd)**

| Point ID | Description | Exposure (In Ldn) |                 | Change (Ldn) |
|----------|-------------|-------------------|-----------------|--------------|
|          |             | Current           | Proposed Action |              |
| ROSE     |             | 51.7              | 48.6            | - 3.1        |
| SPT1     |             | 64.8              | 63.2            | - 1.6        |
| SPT2     |             | 56.0              | 54.1            | - 1.9        |
| SPT3     |             | 66.7              | 59.7            | - 7.0        |
| SPT4     |             | 69.0              | 66.2            | - 2.8        |
| SPT5     |             | 68.5              | 65.0            | - 3.5        |
| SUNF     |             | 49.1              | 45.6            | - 3.5        |

Source: AFCEE 2003; Moulton, 1990

### **3.12.1.2 Other Ground-Based Activity**

Some additional noise results from day-to-day activities associated with operations, maintenance, and the industrial functions associated with the operation of GFAFB. These noise sources include the operation of ground-support equipment, and other transportation noise from vehicular traffic. However, this noise is generally localized in industrial areas on or near the airfield, or on established lines of communication supporting traffic to-and-from the airfield. Noise resulting from aircraft operations remains the dominant noise source in the airfield region.

### **3.12.2 Environmental Consequences**

Noise associated with aircraft operations at GFAFB, other transportation-related noise, and construction activities associated with the Proposed Action would be considered and compared with current conditions to assess impacts.

Based on numerous sociological surveys and recommendations of federal interagency councils, the most common benchmark referred to is an  $L_{dn}$  of 65 dBA. This threshold is

often used to determine residential land use compatibility around airports, highways, or other transportation corridors.

Public annoyance is the most common impact associated with exposure to elevated noise levels. When subjected to  $L_{dn}$  of 65 dBA, approximately 12 percent of persons so exposed will be “highly annoyed” by the noise. At levels below 55 dBA, the percentage of annoyance is correspondingly lower (less than 3 percent).

### ***3.12.2.1 Alternative 1: No Action Alternative***

Under this alternative, neither the Predator B aircraft deployment nor the proposed construction activities would occur. Nevertheless, since the BRAC recommendations are now Public Law, the KC-135R aircraft currently stationed at GFAFB would be reassigned to other locations. Noise associated with aircraft operations at GFAFB would continue to include transient military and civil operations. Since no construction would occur, the noise associated with such activities would not result.

### ***3.12.2.2 Alternative 2: Proposed Action Alternative***

**Airfield Noise.** Under the Proposed Action, the number of transient military and civil aircraft operations at GFAFB would not change appreciably from current conditions. However, regarding based-military operations, the USAF KC-135R aircraft will be transferred, and the DHS, CBP would deploy UAS Predator B aircraft to this location. However, aviation-related noise is expected to remain the dominant noise source in the ROI’s acoustic environment. Also, under this proposal, the DHS CBP would develop new facilities to provide the infrastructure to support their mission. There are several aspects of this proposal that have the potential to alter the acoustic environment in the ROI.

Although not part of the Proposed Action, the currently-stationed KC-135R aircraft will be reassigned to other locations as part of the decisions reached by the 2005 Defense BRAC Commission. Under the Proposed Action, DHS CBP would station Predator B UAS at GFAFB to support their national security mission. Table 3-12 reflects the change in average daily aircraft operations at GFAFB, which would decrease from approximately 193 to approximately 18, an approximate 91 percent decrease.

**Table 3-12. Average Daily Operations at GFAFB<sup>1</sup>**

| Aircraft                | Arrivals     |              | Departures   |              | Operations Within Closed Patterns <sup>2</sup> |          |
|-------------------------|--------------|--------------|--------------|--------------|--|----------|
|                         | Day          | Night        | Day          | Night        | Day  | Night    |
| Predator B <sup>3</sup> | 2.400        | 0            | 2.400        | 0            | 4.800  | 0        |
| Transient Military      | 0.960        | 0.049        | 0.964        | 0.044        | 0  | 0        |
| Civil                   | 2.000        | 0            | 2.000        | 0            | 2.000  | 0        |
| <b>Total</b>            | <b>5.360</b> | <b>0.049</b> | <b>5.364</b> | <b>0.044</b> | <b>6.800</b>                                   | <b>0</b> |

<sup>1</sup> Daily operations are based on averages of annual operations; therefore, numbers are not rounded.

<sup>2</sup> Since closed patterns consist of a landing and a takeoff (two aviation operations), the 90.532 aviation operations within closed patterns equate to 45.266 closed patterns

<sup>3</sup> In coordination with the Air Force Center for Engineering and the Environment (AFCEE), it was determined that the Cessna Conquest was a suitable surrogate for noise, with operations reduced by 50% to account for the twin-engine Cessna Conquest vs. the single engine Predator B. Therefore, operations actually modeled for the Predator B are 50 percent of those shown in the table. Source: AFCEE 2003; AFCEE 2008

Aircraft noise levels at GFAFB resulting from the Proposed Action are shown in Figure 3-6, and are depicted relative to sensitive noise receptors in Figure 3-6. The land areas encompassed by these levels are compared with current noise levels in Table 3-10.

As shown, overall noise exposure around GFAFB decreases under the Proposed Action. The acreage under the 65 dB contour (and greater) would decrease, from 2,189 acres to 1,374 acres, a decrease of 815 acres, or a 37.2 percent decrease.

The same is true for noise exposure at specific points around GFAFB (Figure 3-6). As shown in Table 3-11, noise exposure at those locations decreases substantially over current conditions. For comparison, note that a 3 dB decrease equates to a halving of noise level. As shown, noise levels under the Proposed Action decrease at all specific locations assessed.

**Construction Noise.** Noise from construction is primarily created by the operation of heavy equipment. Also, the equipment used varies by both the type of facility being built or modified and the phase of the construction process.

To assess potential noise impacts, a hypothetical “activity area” was defined, and estimated on-site equipment usage was modeled using the Federal Highway Administration’s *Roadway Construction Noise Model* (RCNM). The results calculated by the model are conservative. Noise levels in the model originated from data developed by the USEPA, and were refined using an “acoustical usage factor” to estimate the fraction of time each piece of construction equipment is operating at full power (i.e., its loudest condition) during the project (US DOT 2006).

The RCNM collects acoustic data at identified receptor points, and reports equivalent noise levels at those points. For this project, modeling shows that based on expected activities, noise levels fall well below 65 dBA within 400 feet of the site.

Construction noise emanating off-site would probably be noticeable in the immediate site vicinity, but generally would not be expected to create adverse impacts to people or alter land use compatibility. Furthermore, no construction activity is planned during evening and night hours, construction-related noise is intermittent and transitory, and ceases at the completion of construction.

It should be noted that the areas involving construction are situated within areas already exposed to elevated noise from airfield operations. All projects are located in, or immediately proximate to the airfield. These areas are well within the  $L_{dn}$  65 contour created by aircraft noise. The long-term acoustic environment at GFAFB would not be

expected to be influenced by construction activities, and would continue to be dominated by aviation activities.

### **3.12.2.3 Alternative 3: Additional Facilities Construction**

The Alternative Action, involving the construction of a new hangar facility at the south end of the Bravo Ramp is located on a parcel of land that is currently designated for airfield uses. The construction would result in reclassification of the property as aircraft operations and maintenance. The proposed location of the new construction is adjacent to current aircraft operations and maintenance operations and would not interfere with airfield operations. With the exception of temporary additional noise impacts due to construction, implementation of Alternative 3 would have the same impacts as Alternative 2.

## **3.13 UTILITIES AND INFRASTRUCTURE**

Infrastructure is the system of public works, utilities, and transportation networks that provide the basic framework for a community. Utilities include water, power supply, and waste management. Transportation networks refer to roadways, street systems, rail systems, airports, pedestrian walkways, bike paths, and other forms of mass transit. Transportation impacts will be discussed in section 3.14 Roadway/Traffic.

The infrastructure information was obtained from the *Grand Forks Air Force Base General Plan* (GFAFB 2006) completed in June of 2006.

### **3.13.1 Affected Environment**

GFAFB infrastructure components include the water supply system, electrical, natural gas, sanitary sewer, storm drainage, and liquid fuels.

GFAFB currently draws the majority of its water from the City of Grand Forks through a 14 inch water main with a pumping capacity of 1,870,000 gallons per day. On stand-by are an eight inch water main from Aggasiz Water and an eight inch water main from the Trail Co. with a combined pumping capacity of 1,456,000 gallons per day. The water storage capacity of the four elevated tanks located at GFAFB is 1,900,000 gallons. Current demand is averaging 1,000,000 gallons per day leaving an ample water supply for future Base expansion/mission requirements (GFAFB 2006).

Electric power is purchased from Nodak Electric Cooperative and is supplied by two 69-kilovolt (kV) feeders. There are two substations and nine feeder circuits distributing power on the Base. Over 72 percent of the Base's power lines are buried and a major objective of the Infrastructure Plan is to bury the remaining above ground power lines to provide the highest system reliability. Eighty percent of the distribution transformers are loaded at less than 30 percent of their kilovolt-ampere (kVA) rating with over 99 percent of the transformers loaded at less than 60 percent. This leaves adequate electrical power capacity for future Base expansion. Emergency electrical power for critical facilities is supplied by 25 back-up generators (GFAFB 2006).

Natural gas supplied and purchased from EXCEL Energy is conveyed by a 12 inch main with a minimum capacity of 260,000 cubic feet per hour at minimum pressure of 100 pounds per square inch. An eight inch main distributes natural gas throughout the Base and is used for heating as well as potable hot water generation in Base facilities. Adequate supply is available for future Base expansion (GFAFB 2006).

GFAFB's sanitary sewer system is operated by the Base and is located on Base property. Sewage flows to the treatment facility by gravity and force mains. There are

nine lift stations in the total collection system and four treatment cells/lagoons. The lagoons have adequate capacity for future Base expansion (GFAFB 2006).

The storm drainage system consists of open channels, catch basins, underground concrete pipes, as well as paved and unpaved ditches. GFAFB has four main storm water outfalls; the northwest ditch, north ditch, south ditch and west ditch (319 CES 2005, GFAFB 2006). In the *Stormwater Pollution Prevention Plan for Grand Forks Air Force Base* the South Ditch is designated as the Southeast Ditch and the North Ditch is designated as the Northeast Ditch (CES 2005). All of these ditches discharge to surface water at the adjoining water ways at the property boundary (GFAFB 2006).

Another significant infrastructure item within GFAFB is its liquid fuel storage and distribution system. The Base's operational fuel storage consists of more than 1,680,000 gallons of JP8 in four above ground tanks. This fuel delivery system supplies fuel to 31 hydrants with the available capacity to supply 48 hydrants on the aircraft parking apron. GFAFB also is able to store and deliver up to 53,000 gallons of unleaded gasoline, 66,000 gallons of diesel fuel and 46,000 gallons of deicing fluid (propylene glycol) (GFAFB 2006).

### **3.13.2 Environmental Consequences**

#### **3.13.2.1 Alternative 1: No Action Alternative**

Under the No Action Alternative, no construction would take place and personnel and assets would not deploy to GFAFB, thus there would be no impact to the utilities and infrastructure.

### **3.13.2.2 Alternative 2: Proposed Action Alternative**

The primary concerns regarding utilities and infrastructure are the effects of implementing the Proposed Action on the capacity and supply in and around GFAFB.

No adverse impacts to the utilities and infrastructure system are anticipated from the implementation of the Proposed Action. According to the GFAFB General Plan, the utilities and infrastructure system has adequate supply and/or capacity to accommodate future Base expansion/mission requirements (GFAFB 2006).

### **3.13.2.3 Alternative 3: Other Alternative Considered**

No adverse impacts to the utilities and infrastructure system are anticipated from the implementation of Alternative 3. The capacity utilities and infrastructure system has adequate supply and/or capacity to accommodate a new hangar facility and its operations.

## **3.14 ROADWAYS/TRAFFIC**

Roadway and traffic refers to the transportation system which enable individuals to travel within a given area. Capacity, efficiency and access of the transportation resources are the primary concerns with regards to roadway and traffic.

### **3.14.1 Affected Environment**

There are two entrances to GFAFB (Figure 3-1). The primary entrance (main gate) is accessed from County Highway B-3. The main gate provides access to Steen Boulevard which is the center spine of the Base roadway system. The commercial gate, a secondary entrance, is accessed from U.S. Highway 2 and provides access to Eielson Street. Eielson Street is the longest street on the Base extending from the

commercial gate in the south to the camping area in the north. Steen Boulevard, Eielson Street and their intersecting feeder roads provide access to the Base's operational, administrative, commercial, industrial and housing areas (GFAFB 2006). The traffic load on the Base is at acceptable levels with the peak volumes during the rush-hour periods of 0700 to 0800 in the morning and 1600 to 1700 in the afternoon (SDDC TEA 2004). Interstate 29 and the regional highway system are readily accessed from GFAFB. The roadways adjacent to the Base have adequate capacity for existing traffic (GFAFB 2006).

GFAFB also has six miles of multi-use trail connecting the housing areas with the rest of the Base. This trail system accommodates pedestrians and/or bicycle traffic separating them from vehicular traffic (GFAFB 2006).

### **3.14.2 Environmental Consequences**

#### ***3.14.2.1 Alternative 1: No Action Alternative***

Under the No Action Alternative, no personnel or assets would deploy to GFAFB thus there would be no impact to the roadway or traffic.

#### ***3.14.2.2 Alternative 2: Proposed Action Alternative***

Impacts to roadways and traffic are assessed based on the effects to capacity, efficiency and access in and around GFAFB.

No adverse impacts to the roadways and traffic system are anticipated from the implementation of the Proposed Action. The decreased use of the roadways and traffic system should ease congestion during peak usage times within GFAFB. Additionally, the roadways adjacent to the Base have adequate capacity for existing traffic (GFAFB 2006).

### **3.14.2.3 Alternative 3: Other Alternative Considered**

No adverse impacts to the roadway and traffic system are anticipated from the implementation of the Alternative 3. As with the Proposed Action Alternative, the overall net loss of personnel at the Base would decrease the use of the roadway and traffic system.

## **3.15 AESTHETIC AND VISUAL RESOURCES**

Aesthetic and visual resources of an area are those physical features that make up the visible landscape, including man-made features, land, water and vegetation and the area's existing aesthetic character. All of these features combine to form a viewshed of an area.

### **3.15.1 Affected Environment**

GFAFB is located in a rural area of North Dakota in the Red River Valley Section of the Central Lowlands (USFS 1994). Topography in the region is flat and land use is characterized by low density residential and agricultural. Land use within the installation is a mix of improved, semi-improved and unimproved areas. Improved areas include administrative buildings, living quarters, family housing, maintenance, warehouse and airfield support. Semi-improved areas include runway borders, the runway infield and approach clear zones. Unimproved areas include woodlands, open spaces and wetlands.

### **3.15.2 Environmental Consequences**

#### **3.15.2.1 Alternative 1: No Action Alternative**

Under the No Action Alternative, no CBP personnel or assets would deploy to GFAFB and no impacts to visual resources would occur.

### **3.15.2.2 Alternative 2: Proposed Action Alternative**

Only minimal impacts to the viewshed are expected to occur as a result of implementing the Proposed Action. The only new construction that would have the potential to impact the viewshed would be the construction of two UAS antennas on the west side of the airfield. These antennas would be placed in the general vicinity of an existing antenna farm and other Base support structures at a height of approximately 20 feet.

### **3.15.2.3 Alternative 3: Additional Facilities Construction**

Construction of the new CBP UAS hangar would have additional impacts to the viewshed but these impacts would be minimal. The hangar would be constructed along the airfield in the vicinity of other aircraft hangars. The hangar would be constructed in compliance with Base standards for architectural design at height similar to existing facilities.

## **3.16 HAZARDOUS MATERIALS**

### **3.16.1 Affected Environment**

This section describes the current management of hazardous materials and petroleum products, hazardous and petroleum wastes, Installation Restoration Program (IRP) sites, Underground Storage Tank (UST) sites, and solid wastes within the proposed renovation areas (Buildings 541 and 600) and proposed construction areas (proposed hangar south of Bravo Ramp and UAS antenna site).

#### **3.16.1.1 Hazardous Materials and Petroleum Products**

Hazardous materials and petroleum products are used throughout GFAFB for various functions, including aircraft maintenance, aircraft ground equipment maintenance, ground vehicle maintenance and facilities maintenance. Fuels (e.g., jet fuel, diesel, and

gasoline) are stored in large storage tanks. Hazardous materials and petroleum products are currently used to a lesser extent in the two buildings scheduled for renovation. Facility 541 (Squadron Operations) is currently vacant, with utility closets only storing small containers of cleaners, solvents, and degreasers. Facility 600 (Aircraft Hangar) does not currently store any hazardous materials or petroleum products (based on the visual site inspection in May 2008). However, facility 600 was used to store oils, fuels, and cleaners as part of aircraft maintenance operations during its use by the 319 ARW.

Most spills at GFAFB are oil and fuel spills resulting from leaking vehicles, aircraft, or storage tanks. Spills that have occurred at GFAFB are listed in Section 17.2 of the *Spill Prevention, Control, and Countermeasure Plan*: (319 CES 2003). These occur most often at the aircraft ramps. As shown in this document, no spills were identified within the two buildings scheduled for renovation. However, fuel spills on the Bravo Ramp may have impacted the proposed future hangar area at the south end of Bravo Ramp.

### **3.16.1.2 Hazardous and Petroleum Wastes**

Hazardous and petroleum waste generating operations include aircraft maintenance, vehicle maintenance, and civil engineering. These hazardous wastes include varying quantities of spent solvents, fuels, stripping chemicals, paint, oils, and batteries. These wastes are tracked to ensure proper identification, storage, transportation, and disposal, as well as implementation of waste minimization programs. GFAFB is currently a small quantity generator (SQG) of hazardous waste and maintains USEPA Identification Number ND3571924759. At the time of the visual inspection in May 2008, no hazardous or petroleum wastes were in the two buildings scheduled for renovation (Buildings 541 or

600). However, Facility 600 was used to generate used oils and waste solvents as part of the aircraft maintenance operations during its use by the 319 ARW.

#### ***3.16.1.3 Installation Restoration Program Sites***

The Department of Defense IRP is designed to identify, evaluate, and remediate sites where activities may threaten public health, welfare, or the environment. The investigation of past disposal practices at the GFAFB identified seven sites (IRP Sites FT-02, LF-03, ST-04, OT-05, ST-06, ST-07, and ST-08) for further action (GFAFB 1995). This included a fire training area/old sanitary landfill, a new sanitary landfill, an explosive ordnance disposal area, underground storage tank areas, and fuel spill sites. All seven IRP Sites are currently closed, or have achieved remedy in place status and are monitored under a regional contract (GFAFB 2006).

#### ***3.16.1.4 Storage Tanks and Oil-Water Separators***

Various storage tanks are used at GFAFB to store jet fuel, diesel fuel, gasoline, and used oil. In addition, GFAFB uses oil/water separators (OWSs) to separate oils, fuels, and grease from wastewater and to prevent contaminants from entering the installation sanitary sewer and stormwater drainage systems. No USTs, ASTs, or OWSs are present within the proposed construction or renovation areas. Two 5,200-gallon diesel fuel ASTs (555-1 and 555-2) and two 5,000-gallon potassium acetate (runway deicer) ASTs (555-3 and 555-4) are located adjacent to the proposed hangar on the south portion of Bravo Ramp.

#### ***3.16.1.5 Solid Wastes***

GFAFB generates solid waste in the form of trash, non-hazardous industrial wastes, and construction debris. These non-hazardous solid wastes are collected and removed by

private contractor and recycled or disposed of at an off-site landfill. Old and inactive landfills are located in the north central portion of GFAFB. These were utilized prior to the implementation of disposal regulations and are not adjacent to the proposed construction and renovation areas (Reynolds, et al 1985).

The nearest municipal waste and asbestos-permitted landfill is the Grand Forks Landfill (SW-069), located approximately 12 miles from GFAFB (GFAFB 2007). The Grand Forks landfill has a disposal rate of 200 tons per day, and the disposal rate for asbestos-containing material (ACM) is \$10 per cubic yard. The municipal waste portion of the landfill is scheduled to close sometime in 2009; however, it will still accept ACM (GF Landfill 2008). Hard fill, construction debris, and inert wastes generated by GFAFB are disposed of at a demolition debris-permitted landfill (IT-08) located approximately four miles off-Base (GFAFB 2007).

### ***3.16.1.6 Herbicides and Pesticides***

GFAFB does apply insecticides and herbicides at various facilities, primarily for weed and mosquito control. Herbicides, such as Picloram™, nonselective glyphosate, and 2,4-D are used, and aerial spraying of Altosid™ larvicide and Trumpet™ adulticide for mosquitoes has occurred on Base, with possible drift onto areas scheduled for construction or renovation. The pesticide chlordane has not been used on GFAFB, and soil sampling for pesticides and herbicides has not been conducted in the proposed construction or demolition areas. Military public health maintains records on all pesticide applicators (GFAFB 2007).

### **3.16.1.7 Asbestos**

Due to the age of facilities construction (beginning in the 1950s), the potential for ACM at GFAFB buildings exists. The 319 ARW maintains an Asbestos Operations and Management Plan for all facilities. Asbestos was found in wall and ceiling covering, floor tiles, exterior siding, and thermal system insulation at numerous GFAFB facilities (Braun 2008). Of the two buildings scheduled for renovation, ACM is present in Facility 600, and the abatement of approximately 4,000 linear feet of thermal system insulation is currently on-going (as of the visual inspection in May 2008). Facility 541 was constructed in 2000 and is therefore unlikely to contain ACM.

### **3.16.1.8 Lead Based Paint**

Due to the age of facilities construction (beginning in the 1950s), the potential for lead-based paint on the GFAFB buildings exists. Although a lead-based paint survey has not been conducted at the industrial buildings within the installation, all buildings constructed pre-1980 are considered to contain some lead-based paint (Braun 2008). This includes Facility 600, where some flaking paint was observed during the inspection. It is assumed that Facility 541, which was built in 2000, was not painted with lead-based paint.

## **3.16.2 Environmental Consequences**

This section addresses the potential impacts caused by hazardous materials and waste management practices and the impacts of existing contaminated sites on reuse options, which includes hazardous materials/petroleum waste, storage tanks, solid waste, herbicides and asbestos and lead.

### **3.16.2.1 Alternative 1: No Action Alternative**

Under this alternative, there would be no change to the current operations at GFAFB. Therefore, conditions within the proposed construction and renovation areas would continue as described in Section 3.16.1.

### **3.16.2.2 Alternative 2: Proposed Action Alternative**

Under this alternative, renovation of Buildings 541 and 600 would occur and construction of the UAS antenna (and associated concrete pad) would occur. The short-term and long-term impacts of these actions are discussed in the following paragraphs.

**Hazardous Materials and Petroleum Products.** With regard to short-term impacts, construction and renovation activities would cause short-term increases in the quantities of hazardous materials (e.g., paint) and petroleum products (e.g., vehicle fuel) used and stored within the installation. CBP is responsible for managing these materials in accordance with federal, state, and local regulations to protect their employees from occupational exposure to hazardous materials and to protect the public health of the surrounding community. The operating location would be responsible for the safe storage and handling of hazardous materials used in conjunction with all construction and demolition operations. These materials would be delivered to GFAFB in compliance with the Hazardous Materials Transportation Act under 49 CFR.

With regard to long-term impacts, the six UAS Predator aircraft require less fuel and maintenance fluids than a single KC-135R refueler aircraft (on an annual basis). Therefore, the amount of maintenance fluids, aircraft lubricants, and jet fuel required for flight operations would decrease.

With regard to exposure to contaminated soils, spills of hazardous materials and petroleum products were not observed at the buildings scheduled for renovation (Building 541 and Building 600) or the proposed site of the UAS radio antennas; however, it is possible contaminated soils are located on these properties due to past spills or leaks.

**Hazardous and Petroleum Wastes.** The proposed construction and renovation activities would cause short-term increases in the volume of hazardous and petroleum wastes generated. Wastes generated by the construction and demolition contractors are managed and removed offsite by these contractors. Therefore, short-term impacts to the SQG designation for GFAFB SQG (i.e., generation of more than 1,000 kilograms of hazardous waste in a month) are not anticipated.

It is anticipated that implementation of the Proposed Action would decrease the amount of hazardous and petroleum wastes generated. In addition, the amount of hazardous and petroleum wastes generated by the six UAS Predator B aircraft would be less than a single KC-135R refueler aircraft (on an annual basis). Therefore, the Proposed Action would not have a long-term impact on the SQG status of GFAFB.

Although no contamination was observed, it is possible that contaminated soils are located on these properties due to past spills or leaks. These past spills include a former fire training area located in the parking lot of Building 541. However, the parking lot of Building 541 will not be demolished as part of the proposed renovation. Therefore, there is minimal possibility for exposure to soils contaminated with hazardous wastes as part of this Proposed Action.

**Installation Restoration Program Sites.** With regard to exposure to contaminated soils, no IRP sites are located within the Proposed Action areas, or immediately adjacent and upgradient to proposed areas of construction or renovation. Therefore, it is unlikely that construction and/or renovation activities would encounter contaminated soils from these activities.

**Storage Tanks and Oil Water Separators.** With regard to exposure to contaminated soils, no ASTs, USTs, or OWSs are currently within the Proposed Action areas.

**Solid Waste.** With regard to short-term impacts, implementation of the Proposed Action would generate solid waste from debris generated during construction and renovation. The contractor would have the responsibility of arranging transportation and disposal of waste generated during the demolition and construction activities. Since no demolition is proposed, the renovation of Building 541 (40,460 square feet) and Building 600 (24,534 square feet) would not generate a large amount of debris over a short period of time. Hard fill, construction debris, and inert wastes generated by GFAFB are disposed of at a demolition debris-permitted landfill (IT-08) located approximately four miles off-Base. The estimated 227 tons of debris generated during the construction of the UAS antenna and the renovation of Buildings 541 and 600 is a minimal percentage of the IT-08 landfill capacity.

**Asbestos.** With regard to short-term impacts, asbestos was found within Building 600, which is scheduled for renovation. Abatement of approximately 4,000 linear feet of thermal system insulation is currently on-going (as of the visual inspection in May 2008) and is scheduled to be completed prior to renovation of Building 600. Building 541 was constructed in 2000, and is therefore unlikely to contain ACM. Any asbestos

encountered during facility demolition would be the responsibility of the 319 ARW and is regulated under National Emission Standards for HAPs to prevent the release of asbestos fibers due to damage and disturbance of asbestos-containing materials. Exposed friable asbestos would be removed in accordance with USAF policy and applicable health laws, regulations, and standards.

**Lead Based Paint.** With regard to short-term impacts, Building 541 was built in 2000 and is not suspected to contain lead-based paint. Building 600 was built prior to 1980 and lead and chromium-based paints have the potential to occur on the walls, beams, or floors of Building 600; however no testing has been accomplished. According to GFAFB policy, it is assumed all structures built pre-1980 contain lead-based paint. Therefore, all construction debris associated with Building 600 qualifies as a potential RCRA-hazardous waste and would be disposed of in accordance with applicable federal, state, and USAF regulations.

### **3.16.2.3 Alternative 3: Additional Facilities Construction**

Under this alternative, construction of the proposed hangar south of Bravo Ramp would occur. The differences between Alternative 2 and Alternative 3 are discussed in the following paragraphs.

**Hazardous Materials and Petroleum Products.** With regard to exposure to contaminated soils, past spills include the removal of a leaking 5,000-gallon diesel fuel UST (555-2) located immediately adjacent to the south portion of Bravo Ramp. Therefore, it is possible that construction activities for the new hangar would encounter contaminated soil or groundwater from these past spills. If contaminated soils or

groundwater are encountered, they would be managed in accordance with applicable laws and regulations.

**Hazardous and Petroleum Wastes.** With regard to exposure to contaminated soils, a Helicopter Maintenance Hangar (Building 519) was formerly located immediately southwest of the proposed hangar south of the Bravo Ramp. It is possible that unreported spills and/or rinse and wastewater runoff from these two sites impacted the soil. Therefore, it is possible that construction of the building footings would encounter contaminated soils or groundwater. If contaminated soils or groundwater are encountered, they would be managed in accordance with applicable laws and regulations.

**Installation Restoration Program Sites.** The potential impacts to IRP sites resulting from the implementation of Alternative 3 would be the same as Alternative 2.

**Storage Tanks and Oil Water Separators.** The potential impacts to storage tanks and oil water separators from implementation of Alternative 3 would be the same as Alternative 2.

**Solid Wastes.** The proposed hangar and operating facility (10,000 square meters) would generate an additional 215 tons of debris during construction.

**Asbestos.** Impacts relating to asbestos and ACM would be the same as those described in Alternative 2.

**Lead-Based Paint.** Impacts relating to lead-based paint would be the same as those described in Alternative 2.

### **3.17 SOCIOECONOMIC**

Socioeconomic factors are defined as the basic attributes and resources associated with the human environment. The relevant factors related to the proposed CBP mission at GFAFB include: population and housing, economic activity And public services.

Data for the socioeconomic analysis in this EA were obtained from a variety of sources, including the USAF, the U.S. Bureau of the Census (USBC), and certain North Dakota agencies as noted in this section.

GFAFB is situated in Grand Forks County near the North Dakota-Minnesota border, 15 miles west of the City of Grand Forks (see Figure 1-1). Socioeconomic activities associated with the Base are concentrated in Grand Forks County, which comprises the ROI for this analysis. Socioeconomic characteristics are also addressed for GFAFB and for the City of Grand Forks, when available. Airspace operations associated with the UAS beddown are not anticipated to have socioeconomic effects; consequently socioeconomic characteristics of counties under the operational airspace were not included in this analysis.

#### **3.17.1 Existing Conditions**

##### ***3.17.1.1 Population and Housing***

**Grand Forks AFB.** The GFAFB population of 5,383 persons is comprised of 2,168 military personnel, 2,061 military family members, 387 appropriated fund civilian personnel and 767 non-appropriated fund personnel (USAF 2007). During 2007, 1,253 military personnel and 1,072 associated family members resided in on-Base housing, which includes 1,489 family housing units and 649 dormitory units. The remaining 2,976 military and civilian employees and their families reside in off-Base communities.

**Grand Forks County.** The estimated population of the City of Grand Forks is 48,618 persons, which comprises about 75 percent of the Grand Forks County population of 65,435 persons. The County, in turn, accounts for about 10 percent of the North Dakota population of 635,867 persons. Population in Grand Forks has declined 0.3 percent since 2000, compared to a decline of 0.9 percent for the state of North Dakota overall (USBC 2008). Additional information regarding demographic characteristics of the population can be found in Section 3.11 Environmental Justice.

According to the Census, there were a total of 28,974 housing units in Grand Forks County in 2006. The vacancy rate was 7.7 percent, and the homeownership rate was 55.1 percent. The median value of owner-occupied homes in the county was \$125,000. There were 26,726 households in the county in 2006, with an average household size of 2.45 persons (USBC 2006).

### ***3.17.1.2 Economic Activity***

**Grand Forks AFB.** GFAFB provides a valuable contribution to the Grand Forks economy through employment of military and civilian personnel and expenditures for goods and services from local businesses. In addition to Base employment of 3,322 personnel as described above in Section 3.17.1.1, annual payroll associated with GFAFB personnel amounts to \$139 million. In FY 2007, construction, service contracts, and purchases totaled \$186 million. GFAFB activities are estimated to generate 1,125 indirect jobs in the region with associated wages totaling \$36 million. The total economic impact of GFAFB is determined to be \$361 million annually (USAF 2007).

**Grand Forks County.** The Grand Forks region, historically dependent on agricultural activity, has broadened their economic base to include higher education, health care, and

scientific research. The University of North Dakota (UND), in addition to academic pursuits, supports research and development entities such as the Energy and Environmental Research Center and the Center for Innovation. In addition to GFAFB, large public sector employers include UND, Grand Forks Public School District #1 and the City of Grand Forks. Top private employers in Grand Forks include Altru Health System, Valley Memorial Homes, JR Simplot Company, LM Glasfiber, and Cirrus Design Corporation (North Dakota Job Service 2007).

The civilian labor force in Grand Forks County included 35,786 persons in 2006, of which 34,691 were employed. The unemployment rate in 2006 was 3.1 percent. Median household income was \$39,715. Educational services and health care are the two largest employing industries, followed by retail trade, arts/entertainment/recreation services, and manufacturing sectors (USBC 2006).

### ***3.17.1.3 Public Services***

Daily operation of GFAFB, and furnishing of services and support to Base personnel and family members, currently is the responsibility of the 319 ARW, the Base host unit. Off Base public services are provided by a number of public and private entities. Police and fire protection are principally provided by the Grand Forks Police and Fire Departments, respectively. The Grand Forks Sheriff's Department also provides law enforcement services. Altru Health System is the major medical services provider in the Grand Forks region, with facilities including an acute care hospital, rehabilitation hospital, and several clinics. A second medical campus is being developed south of Grand Forks, which includes a psychiatric hospital and medical clinic. The 319<sup>th</sup> Medical Group provides dental and medical services to military personnel and their families on GFAFB.

Grand Forks Public School District #1 includes public schools in Grand Forks and on Base at GFAFB. There are 18 schools in the district, including 12 elementary schools, four middle schools (Schroeder, South, Twining, Valley), and two high schools (Central and Red River). Total enrollment in the 2006-2007 school year was approximately 7,316 students in grades K through 12. The District employs 685 full-time equivalent teachers and 400 support and administrative staff. The 2006 budget of the school system was approximately \$58.8 million (Grand Forks Public Schools 2008). In FY 2006, the District received \$6.9 million in Impact Aid for federally-connected students (Grand Forks County 2006). There are several private schools operating in the community, including the North Dakota School for the Blind, two Catholic elementary schools and one Catholic high school.

### **3.17.2 Environmental Consequences**

In order to assess the potential socioeconomic impacts of the Proposed Action, demographic and economics characteristics at GFAFB, and the City and County of Grand Forks were analyzed, as presented in Section 3.17.1. Potential socioeconomic consequences were assessed in terms of effects of the Proposed Action on the local economy, typically driven by changes in project personnel or expenditure levels. Economic multipliers, migration ratios, and other factors are utilized to determine the total economic effect of project-related changes on regional socioeconomic attributes.

For this environmental assessment, potential socioeconomic impacts are evaluated for factors associated with the CBP mission at GFAFB, including facility modifications and personnel changes. Construction activity associated with facility modifications on Base often generates temporary economic benefits to the region in terms of employment and income, however lasting only for the duration of the construction period. Personnel

changes associated with the Proposed Action may generate population changes in the region, and related changes in housing and service demand, induced employment and income.

### **3.17.2.1 Alternative 1: No Action Alternative**

Under the No Action alternative, the proposed CBP mission would not occur at GFAFB at this time. The proposed infrastructure improvements and personnel changes would not take place. Therefore, no socioeconomic effects would be anticipated.

### **3.17.2.2 Alternative 2: Proposed Action Alternative**

**Construction-Related Consequences.** Implementation of the CBP mission under the Proposed Action would require infrastructure modifications at GFAFB. The Proposed Action involves renovation of existing Base facilities to support the incoming CBP aircraft and operations. These construction activities would generate a number of jobs during the construction period, and contribute to local earnings and induced spending. These effects would be temporary, however, only occurring for the duration of the construction period. The scope and duration of the construction activity is not expected to place any substantial burden or adverse conditions on the construction industry in the Grand Forks region. No permanent or long-lasting socioeconomic impacts are associated with construction under the Proposed Action.

**Operations-Related Consequences.** Implementation of the CBP mission would require 60 personnel to operate and maintain the aircraft and provide necessary support services. This increase represents a gain of 1.8 percent of the current Base employment of 3,322 positions. Associated payroll increase would amount to an

estimated \$2.9 million. The anticipated increase in Base employment would generate secondary employment amounting to 17 jobs.

Based on the average family size of active duty personnel at GFAFB, an estimated 57 family members would accompany the personnel, yielding a total population increase of 117 persons to the Grand Forks region. An increase of this size represents less than a quarter percent of the population in the City of Grand Forks and less than one percent of the Grand Forks County population. Employment and population changes of this size would not noticeably affect activity and related socioeconomic resources in the vicinity of GFAFB.

### ***3.17.2.3 Alternative 3: Additional Facilities Construction***

**Construction-Related Consequences.** Implementation of the CBP mission under Alternative 3 would require construction of new facilities at GFAFB. However, the anticipated economic effects would be similar. Construction activities would generate a number of jobs during the construction period, and contribute to local earnings and induced spending. These effects would be temporary, however, only occurring for the duration of the construction period. The scope and duration of the construction activity is not expected to place any substantial burden or adverse conditions on the construction industry in the Grand Forks region. No permanent or long-lasting socioeconomic impacts are associated with construction under Alternative 3.

**Operations-Related Consequences.** Operations-related consequences under Alternative 3 would be the same as those described for the Proposed Action.

### **3.18 ENVIRONMENTAL JUSTICE AND PROTECTION OF CHILDREN**

Concern that certain disadvantaged communities may bear a disproportionate share of adverse health and environmental effects compared to the general population led to the enactment in 1994 of EO 12898, *Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations*. This EO directs federal agencies to address disproportionate environmental and human health effects in minority and low-income communities. EO 13045, *Protection of Children from Environmental Health Risks and Safety Risks*, was enacted in 1997, directing federal agencies to identify and assess environmental health and safety risks to children, coordinate research priorities on children's health, and ensure that their standards take into account special risks to children.

For purposes of this analysis, minority, low-income and youth populations are defined as follows:

- Minority Population: Alaska Natives, American Indians, Asians, Blacks, Native Hawaiians and Pacific Islanders, or persons of Hispanic origin (of any race).
- Low-Income Population: Persons living below the poverty threshold as determined by the USBC.
- Youth Population: Children under the age of 18 years.

Estimates of these three population categories were developed based on data from the USBC. The Census does not report minority populations, per se, but reports population by race and by ethnic origin. Low-income and youth populations were drawn from the USBC 2006 American Community Survey.

GFAFB is situated in Grand Forks County near the North Dakota-Minnesota border, 15 miles west of the City of Grand Forks (see Figure 1-1). The region of interest for the

Environmental Justice analysis is Grand Forks County. For comparative purposes, demographic data for the State of North Dakota and the U.S. also are presented.

### 3.18.1 Existing Conditions

**Grand Forks County.** To comply with EO 12898, ethnicity and poverty status in the vicinity of GFAFB were examined and compared to state and national data. Minority persons represent 9.1 percent of the Grand Forks County population, compared to 9.6 percent of the state and 33.6 percent of the nation (see Table 3-13). American Indians and Persons of Hispanic or Latino origin comprise the predominant minority groups in the County, each accounting for about 25 percent of the minority population. At the state level, however, American Indians are the largest minority group, representing more than half of all minorities in North Dakota.

**Table 3-13. Total Population and Populations of Concern (2006)**

|                       | Total Population | Percent Minority | Percent Low-Income | Percent Youth |
|-----------------------|------------------|------------------|--------------------|---------------|
| Grand Forks County    | 65,435           | 9.1%             | 14.9%              | 21.9%         |
| State of North Dakota | 635,867          | 9.6%             | 11.4%              | 22.6%         |
| United States         | 299,398,484      | 33.6%            | 12.7%              | 24.6%         |

Source: USBC 2006, 2008

The low-income population in Grand Forks County is somewhat higher than state and national levels. In the county, 14.9 percent of the population is designated low-income, comprised of persons and families with incomes below the poverty level. By comparison, low-income population rates for the state and nation are 11.4 percent and 12.7 percent, respectively.

To comply with EO 13045, the number of children under age 18 was determined for the vicinity of GFAFB and compared to state and national levels. The youth population in Grand Forks County is comparable to regional and national levels, with no known concentrated areas of concern where youth might experience special health or safety

risks. Children under 18 years account for 21.9 percent of the county population compared to 22.6 percent and 24.6 percent in the state and nation, respectively.

### **3.18.2 Environmental Consequences**

In order to assess the potential for environmental justice impacts associated with the Proposed Action, demographic characteristics of the population in the vicinity of GFAFB were analyzed, as presented in Section 3.18.1. Environmental justice analysis applies to adverse environmental impacts. Consequently, potential disproportionate impacts to minority or low-income populations are assessed only when adverse environmental consequences to the human population are anticipated otherwise no analysis is required. The same is true for analysis of special risks to children, which would be driven by adverse environmental impacts. If adverse impacts are not anticipated, no special risk to children analysis is required.

#### ***3.18.2.1 Alternative 1: No Action Alternative***

Under the No Action alternative, no change in mission activities, facilities, or personnel are anticipated. No impacts to populations of concern would occur.

#### ***3.18.2.2 Alternative 2: Proposed Action***

Populations of concern within the vicinity of GFAFB are generally proportionate with regional demographic characteristics. Furthermore, the mission activities, facility modifications and personnel changes associated with the Proposed Action are not expected to create significant adverse environmental or health effects to the human population.

Implementation of the Proposed Action is not anticipated to yield any significant or adverse environmental effects to the human population. Furthermore, disadvantaged populations do not occur in disproportionate numbers within or adjacent to the project area. The increase in long-term employment and short-term increase in construction-related employment are not expected to disproportionately affect disadvantaged populations. In addition, there are no anticipated special health or safety risks to children associated with the Proposed Action.

### **3.18.2.3 Alternative 3: Additional Facilities Construction**

Populations of concern within the vicinity of GFAFB are generally proportionate with regional demographic characteristics. Furthermore, the mission activities, facility modifications and personnel changes associated with Alternative 3 are not expected to create significant adverse environmental or health effects to the human population.

Implementation of Alternative 3 is not anticipated to yield any significant or adverse environmental effects to the human population. Furthermore, disadvantaged populations do not occur in disproportionate numbers within or adjacent to the project area. The increase in long-term employment and short-term increase in construction-related employment are not expected to disproportionately affect disadvantaged populations. In addition, there are no anticipated special health or safety risks to children associated with Alternative 3.

## **3.19 SUSTAINABILITY AND GREENING**

### **3.19.1 Affected Environment**

In accordance with EO 13423, *Strengthening Federal Environmental, Energy, and Transportation Management*, CBP A&M would incorporate sustainability and greening

practices by minimizing waste during construction, recycling appropriate materials and purchasing items produced from recycled materials. EO 13423 is a directive that requires federal agencies to implement sustainable practices for a variety of water, energy and transportation related activities. Where possible, the USAF will incorporate sustainable building concepts into the engineering design process. The ROI for sustainability and greening is GFAFB.

### **3.19.2 Environmental Consequences**

#### ***3.19.2.1 Alternative 1: No Action Alternative***

Under the No Action Alternative, no CBP A&M personnel or assets would deploy to GFAFB and no construction would be necessary. No additional sustainability and greening practices would be required.

#### ***3.19.2.2 Alternative 2: Proposed Action Alternative***

To the extent possible, the proposed construction projects will be implemented using sustainable design concepts. Sustainable design concepts emphasize state-of-the-art strategies for site development, efficient water and energy use and improved indoor environmental quality.

#### ***3.19.2.3 Alternative 3: Additional Facilities Construction***

Implementation of Alternative 3 would entail the use of the same sustainable concepts and practices as described for the Proposed Action.

## **3.20 HUMAN HEALTH AND SAFETY**

This section addresses ground, explosive, and flight safety associated with activities conducted at GFAFB. GFAFB is an active USAF installation. The primary unit at the

Base is the 319 ARW. Ground safety considers issues associated with human activities, and operations and maintenance activities that support unit operations. A specific aspect of ground safety addresses anti-terrorism / force protection (AT/FP) considerations. Explosive safety discusses the management and use of ordnance or munitions associated with installation operations and training activities. Flight safety considers aircraft flight risks.

The ROI for safety is GFAFB, the lands immediately adjacent to the Base, and the land underlying the airspace used by the unit.

### **3.20.1 Affected Environment**

#### ***3.20.1.1 Ground Safety***

Day-to-day operations and maintenance activities conducted by the 319 ARW are performed in accordance with applicable USAF safety regulations, published USAF Technical Orders and standards prescribed by USAF Occupational Safety and Health (AFOSH) requirements.

The GFAFB fire department responds to all aircraft accidents on the installation. It is anticipated that as the KC-135R mission is reduced there would be a corresponding reduction in the fire department response and man power. If the capacity of fire response is limited in the future, this area may need to be re-evaluated. There are no Clear Zone or Accident Potential Zone encroachments.

#### ***3.20.1.2 Anti-Terrorism / Force Protection***

As a result of terrorist activities, the DoD and the USAF have developed a series of AT/FP guidelines for military installations. These guidelines address a range of considerations that include access to the installation, access to facilities on the

installation, facility siting, exterior design, interior infrastructure design and landscaping (Unified Facilities Criteria 4 010 01, 2003; USAF Installation Force Protection Guide). The intent of this siting and design guidance is to improve security, minimize fatalities, and limit damage to facilities in the event of a terrorist attack.

Many military installations were developed before such considerations became a critical concern. Thus, under current conditions, many units are not able to comply with all present AT/FP standards. However, as new construction occurs, it would incorporate these standards, and as facilities are modified, AT/FP standards would be incorporated to the maximum extent practicable.

#### ***3.20.1.3 Explosives Safety***

The version of the Predator B utilized by the CPB A&M is not equipped for ordnance nor would it utilize other explosive devices. The 319 ARW stores, maintains, and uses a range of munitions required for performance of their mission. All ordnance is handled and stored in accordance with USAF explosive safety directives and all munitions maintenance is carried out by trained, qualified personnel using USAF-approved technical procedures. There are no explosive safety waivers in effect at GFAFB.

#### ***3.20.1.4 Flight Safety***

The primary public concern with regard to flight safety is the potential for aircraft accidents. Such mishaps may occur as a result of mid-air collisions, collisions with manmade structures or terrain, weather-related accidents, mechanical failure, pilot error, or bird-aircraft collisions. Flight risks apply to all aircraft; they are not limited to the military.

The USAF defines four major categories of aircraft mishaps: Classes A, B, C, and E, which includes High Accident Potential. Class A mishaps result in a loss of life, permanent total disability, a total cost in excess of \$1 million, or destruction of an aircraft. Class B mishaps result in total costs of more than \$200,000, but less than \$1 million, result in permanent partial disability or inpatient hospitalization of three or more personnel. Class C mishaps involve reportable damage of more than \$20,000, but less than \$200,000; an injury resulting in any loss of time from work beyond the day or shift on which it occurred, or occupational illness that causes loss of time from work at any time; or an occupational injury or illness resulting in permanent change of job. HAP events are any hazardous occurrence that has a high potential for becoming a mishap. Class C mishaps and High Accident Potential, the most common types of accidents, represent relatively unimportant incidents because they generally involve minor damage and injuries, and rarely affect property or the public (USAF 2004).

Based on historical data on mishaps at all installations, and under all conditions of flight, the military services calculate Class A mishap rates per 100,000 flying hours for each type of aircraft in the inventory. It should be noted that these mishap rates do not consider combat losses due to enemy action. In evaluating this information, it should be emphasized that data presented are only statistically predictive. The actual causes of mishaps are due to many factors, not simply the amount of flying time of the aircraft.

Over the last five years, KC-135R aircraft have flown an average of more than 242,800 hours. During that time, these aircraft have experienced an average 0.4 Class A mishaps, for a rate of 0.16 per 100,000 flying hours (Smith 2008). The 319 ARW currently operates KC-135R aircraft at GFAFB. During the same time period, the 319 ARW has experienced no Class A mishaps.

### **3.20.2 Environmental Consequences**

Impacts are assessed according to the potential to increase or decrease safety risks to personnel, the public, and property. Proposal-related activities are considered to determine if additional or unique safety risks are associated with their undertaking. If any proposal-related activity indicated a major variance from existing conditions, it would be considered a safety impact.

#### ***3.20.2.1 Alternative 1: No Action Alternative***

Under this alternative, neither the Predator B aircraft deployment nor the proposed construction activities would occur. Nevertheless, since the BRAC recommendations are now Public Law, the KC-135R aircraft currently stationed at GFAFB would be reassigned to other locations. Safety associated with aircraft operations at GFAFB would continue to include transient military and civil operations, but risks associated with KC-135R operations would be negated.

Since no construction would occur, risks associated with such activities would not result.

#### ***3.20.2.2 Alternative 2: Proposed Action***

Providing new and upgraded facilities at GFAFB for CBP requirements that support operational needs, are properly sited with adequate space and a modernized supporting infrastructure would generally enhance ground, explosive, and flight safety during required operations, training, maintenance and support procedures, security functions, and other activities conducted by the CBP.

Under the Proposed Action, CBP would begin UAS (Predator B) operations from GFAFB. The Predator B is a relatively new operational aircraft. The USAF currently

has seven Predator B's in its inventory. During FY 2006, the Predator B experienced one Class A mishap when it landed short of the runway (Kowitz 2008).

A prime concern associated with the operation of UAS is the possibility of in-flight collision with other aircraft. CBP intends to operate their Predator B's under TFR in the vicinity of the Base where there is a potential for interaction with existing low-altitude, Visual Flight Rule (VFR) routes ("Victor Routes"), and under FAA COA above FL180 (approximately 18,000 feet above MSL) in Class A airspace where all aviation traffic flies using IFR and is under the control of the applicable ARTCC. Combined, these procedures should minimize any risk of mid-air collisions.

Implementation of the Proposed Action would involve ground activities that may expose workers performing the required site preparation, grading, and building construction to some risk. The United States Department of Labor (DOL), Bureau of Labor Statistics maintains data analyzing fatal and non-fatal occupational injuries based on occupation. Due to the varying range of events classified as non-fatal injuries, the considerations described below focus on fatal injuries since they are the most catastrophic. Data are categorized as incidence rates per 100,000 workers employed (on an annual average) in a specific occupation.

To assess relative risk associated with this proposal, it was assumed that the industrial classifications of workers involved are the Construction Trades. Based on DOL data and considerations of worker exposure, the probability of a fatal injury would be statistically predicted to be 11.9 percent for every 100,000 workers, or one fatal injury for every 11,900 workers (DOL 2006). Although DoD guidelines for assessing risk hazards would categorize the hazard category as "catastrophic" (because a fatality

would be involved), the expected frequency of the occurrence would be considered “remote” (MIL-STD-882 1993). While the potential result must be considered undesirable, risk is low. Strict adherence to all applicable occupational safety requirements would further minimize the relatively low risk associated with these construction activities.

### ***3.20.2.3 Alternative 3: Additional Facilities Construction***

Implementation of Alternative 3 would result in additional risk due to increased construction activities. This risk is low and other impacts associated with Alternative 3 would be the same as those described in Section 3.20.2.2

## **3.21 AIRSPACE MANAGEMENT AND AIR TRAFFIC CONTROL**

### **3.21.1 Affected Environment**

The ROI for airspace and air traffic control (ATC) includes the airspace areas in which the Predator B would fly. These areas include the Class D airspace associated with GFAFB, the TFR for the Predator B and the operational area identified along the U.S. northern border. Airspace management and ATC is defined as the direction, control, and handling of flight operations in the “navigable airspace” that overlies the geopolitical borders of the U.S. and its territories. “Navigable airspace” is airspace above the minimum altitudes of flight prescribed by regulations under United States Code (USC) Title 49, Subtitle VII, Part A, and includes airspace needed to ensure safety in the takeoff and landing of aircraft, as defined in FAA Order 7400.2E (49 USC). This navigable airspace is a limited natural resource that Congress has charged the FAA to administer in the public interest as necessary to ensure the safety of aircraft and its efficient use (FAA Order 7400.2E 2000).

Special Use Airspace (SUA) identified for military and other governmental activities is charted and published by the FAA. Management of this resource considers how airspace is designated, used, and administered to best accommodate the individual and common needs of military, commercial, and general aviation. The FAA considers multiple and sometimes competing demands for aviation airspace in relation to airport operations, Federal Airways, Jet Routes, military flight training activities, and other special needs to determine how the NAS can best be structured to address all user requirements. The FAA has designated four types of airspace within the U.S.: Controlled, Special Use, Other and Uncontrolled airspace.

- Controlled airspace is airspace of defined dimensions within which ATC service is provided to IFR flights and to VFR flights in accordance with the airspace classification (Pilot/Controller Glossary 2004). Controlled airspace is categorized into five separate classes: Classes A through E. These classes identify airspace that is controlled, airspace supporting airport operations, and designated airways affording en route transit from place-to-place. The classes also dictate pilot qualification requirements, rules of flight that must be followed, and the type of equipment necessary to operate within that airspace. Class A airspace includes all flight levels or operating altitudes over 18,000 feet above MSL and its use is dominated by commercial aircraft using routes between 18,000 and 60,000 feet MSL. Class B and C airspace are generally associated with major metropolitan or airports operating at high density levels. Class D airspace is established around an ATC-controlled airport, extending from the ground to 2,500 feet above ground level or higher. All aircraft operating within Class D airspace must be in two-way radio communication with the ATC facility. Class E airspace is general controlled airspace that includes designated Federal airways consisting of the high altitude Jet Routes (J-) and low altitude Victor (V-) route system.
- SUA is designated airspace within which flight activities are conducted that requires confinement of participating aircraft, or place operating limitations on non-participating aircraft. Restricted Areas and Military Operations Areas (MOAs) are examples of SUA.
- Other airspace (sometimes referred to as Airspace for Special Use) consists of advisory areas, areas that have specific flight limitations or designated prohibitions, areas designated for parachute jump operations, Military Training Routes and Aerial Refueling Tracks. This category also includes Air Traffic Control Assigned Airspace (ATCAA). ATCAA permits military aircraft to conduct high-altitude air-to-air combat training, practice evasive maneuvers, perform air refueling, and initiate or egress from attacks on targets within a range. When not required for other needs, ATCAA is airspace authorized for military use by the

managing ARTCC, usually to extend the vertical boundary of SUA. ATCAAs do not appear on any sectional or en route charts.

- Uncontrolled airspace is designated Class G airspace and has no specific prohibitions associated with its use.

The USAF manages airspace in accordance with processes and procedures detailed in Air Force Instruction (AFI) 13-201, *Air Force Airspace Management*. AFI 13-201 implements Air Force Planning Document 13-2, *Air Traffic Control, Airspace, Airfield, and Range Management* and DoD Directive 5030.19, *DoD Responsibilities on Federal Aviation and National Airspace System Matters*. It addresses the development and processing of SUA, and covers aeronautical matters governing the efficient planning, acquisition, use, and management of airspace required to support USAF flight operations.

GFAFB is located approximately nine nautical miles west of Grand Forks International Airport (IAP). Abutting Class D Controlled Airspace has been established around both facilities to manage air traffic arriving at, or departing from the airfields. This airspace extends from the surface to 3,400 feet above MSL around GFAFB, and from the surface to 3,300 MSL around Grand Forks IAP. In the immediate vicinity of GFAFB, there are four Federal airways that pass in close proximity to GFAFB. These airways, V-430, V-55, and V-561 extend west from Grand Forks IAP, with V-55 and V-561 heading southwest through Devils Lake MOA East with minimum en route altitudes of 8,000 feet MSL and 4,000 feet MSL respectively. V-181 heads north from Grand Forks IAP with a minimum en route altitude of 2,600 MSL.

Other civil aviation assets in the ROI include numerous high altitude jet routes located within the operational area. These routes are used by commercial aviation that fly under IFR control by one of the three FAA ATC centers (Minneapolis, Salt Lake City

EA for the Beddown and Flight Operations of Unmanned Aircraft Systems at GFAFB, North Dakota  
and Seattle) and provide separation between aircraft in this portion of the US. While the minimum en route altitude for many of these routes is FL 180, the majority of flight activity on these routes is at higher altitudes up to FL 450. Just west of the Base, J-107 passes over the Devils Lake East MOA, with a minimum en route altitude of FL 210 to FL 450 with no specific width and is based on Very-High-Frequency Omnidirectional-Range Radio (VOR)/Very-High-Frequency Omnidirectional-Range Radio and Tactical Air Navigation (VORTAC) navigational aids.

Grand Forks IAP is the home to UND's flight and training facilities associated with the John D. Odegard School of Aerospace Sciences. Associated with the school are over 80 aircraft that operate from Grand Forks IAP. These aircraft are primarily Piper Warriors, Piper Arrows and Piper Seminoles. These aircraft are used to conduct all-season comprehensive aviation training and have logged up to 126,500 hours in recent years (FY 2002). However, current operations have averaged around 100,000 hours. To accomplish this training the airspace surrounding Grand Forks IAP and GFAFB has been subdivided into 20 areas for flight training.

### **3.21.2 Environmental Consequences**

The potential effects of the proposed beddown on the airspace management ROI (the regional air traffic environment) were assessed by considering the changes in aircraft operations and airspace uses that could occur relative to current conditions.

The type, size, shape, and configuration of individual airspace elements in a region are based upon, and are intended to satisfy, competing aviation requirements. Potential impacts could occur if air traffic in the region and/or the ATC systems were encumbered by changed flight activities. When any significant change is planned, such as new or

revised defense-related activities within airspace areas, the FAA reassesses the airspace configuration to determine if such changes could adversely affect:

- ATC systems and/or facilities;
- Movement of other air traffic in the area; or
- Airspace already designated and used for other purposes supporting military, commercial, or civil aviation.
- The creation of any of these conditions could constitute a significant impact.

### ***3.21.2.1 Alternative 1: No Action Alternative***

Under this alternative, neither the Predator B aircraft deployment nor the proposed construction activities would occur. Nevertheless, since the BRAC recommendations are now Public Law, the KC-135R aircraft currently stationed at GFAFB would be reassigned to other locations. Aircraft operations at GFAFB would continue to include transient military and civil operations.

### ***3.21.2.2 Alternative 2: Proposed Action Alternative***

To accomplish the CBP mission it would be necessary to launch and recover Predator B aircraft from GFAFB and to conduct 12 to 15-hour sorties within the operational area defined in Figure 2.2. In order to conduct UAS flight operations, CBP is working with the FAA to develop the necessary airspace structure to bring UAS to GFAFB, to train in the vicinity of GFAFB and to conduct their mission along the northern border. This airspace construct must allow for UAS operations (take offs, landings, transition from Class A to Class D airspace) and UAS training operations (closed patterns, low approaches, touch and go's, full stop landings and takeoffs). CBP proposes to accomplish this in coordination with the FAA, through the use of three separate COAs and a TFR.

COAs are managed through the FAA's Unmanned Aircraft Program Office. A COA is an authorization issued by the Air Traffic Organization to an operator for a specific unmanned aircraft. After the operator submits a completed application, the FAA conducts a comprehensive operational and technical review of the proposal. If necessary, some limitations may be imposed as part of the approval process to ensure the UAS can operate safely with other users of the airspace involved.

Under Title 49 of the CFR (49 CFR § 40103), the FAA has authority to formulate policy regarding the navigable National Airspace System. Title 14 (14 CFR § 91 and 99) contains regulations for addressing TFRs. As defined by FAA Advisory Circular 91-63C, a TFR is a regulatory action issued via the U.S. Notice to Airmen system to restrict certain aircraft from operating within a defined area, on a temporary basis, to protect persons or property in the air or on the ground.

A Transit COA would be established for the movement of aircraft from Sierra Vista Airport in Arizona to GFAFB. This COA would be used to initially bring aircraft to GFAFB and then as necessary for maintenance, redeployment and the addition of aircraft to the Grand Forks inventory. The use of this COA would be intermittent and infrequent. A chase aircraft would be used to escort CBP's Predator B UAS into and out of Class A airspace from GFAFB.

The Operational COA would extend along the northern U.S. border encompassing an area approximately 100 miles north to south and 900 miles east to west. This would include airspace controlled by the Minneapolis, Salt Lake, and Seattle ARTCC. The operating altitude would be approximately FL 190-210 (approximately 19,000 to 21,000 feet above MSL).

Class D controlled airspace currently exists around GFAFB to support USAF aircraft operations. However, it only extends to 3,400 feet MSL. Therefore, an additional approximate 14,600 feet in altitude are required to reach Class A airspace (i.e., FL 180 or greater), and no restricted airspace exists above GFAFB. Once in Class A airspace, the Predator B can operate safely and in concert with FAA requirements under IFR.

In order to transit to this additional altitude, a TFR would be required for the safety and protection of other aircraft that may be using the same airspace. The TFR would require activation during launch and recovery of Predator B operational missions. CBP would request a TFR activated for 1+30 hours ( $\pm$  45 minutes of scheduled operation time) for each launch and recovery operation. Anticipated nominal launch and/or recovery times are expected to be 7:00 AM local and 7:00 PM local. However, these times could vary depending upon individual mission requirements. The operational COA and its associated TFR would support approximately 500 mission support sorties (1,000 arrivals and departures using the TFR) per year.

The Training COA would be specifically designed to support UAS pilot proficiency and certification in the immediate vicinity of GFAFB. Operations would be expected to be contained within GFAFB's existing controlled Class D airspace, and conform to established flight procedures currently used at GFAFB. Activities would include closed patterns, low approaches, touch-and-goes, full stop landings and takeoffs. This COA would also identify lost data-link procedures. The Training COA would be expected to support approximately 100 sorties per year. Training sorties would be approximately two to three hours in duration.

Environmental consequences associated with the use of the Transit COA are not anticipated to be significant due to the infrequent use of this COA and the use of a chase plane to accompany the Predator B during its flight from Sierra Vista, Arizona to GFAFB.

Use of the Operational COA would not have significant impacts on airspace management and use because the Predator B would be under IFR conditions under the control of an FAA ARTCC which would maintain separation from other commercial or general aviation aircraft. The Predator B would be operating at FL190 which would be in the lower portion of Class A airspace which is used to a lesser extent by commercial aircraft.

The use of the TFR to fly the Predator B from existing Class D to Class A airspace could potentially affect civil aviation transiting the area surrounding GFAFB during the limited time that the Predator B occupies the airspace as it climbs/or descends to Class A airspace. Prior to launch or recovery of the Predator B from GFAFB, ATC at GFAFB would coordinate with FAA ARTCC to ensure that the airspace is clear for UAS operations. Initially this activity would occur twice a day (each period lasting up to 45 minutes) for launch and recovery of the operational mission. Once the full complement of six Predator B's are at GFAFB this activity could increase to six times a day.

Use of the Training COA could also potentially affect civil aviation transiting the area surrounding GFAFB. This training activity would take place approximately twice per week for a period of two to three hours. During that timeframe GFAFB ATC would ensure that the Class D airspace surrounding GFAFB would be available for CBP and military use only.

The CBP would adhere to FAA requirements for UAS operations when using these COAs. General aviation and commercial activity transiting the Class D airspace surrounding GFAFB could avoid COA airspace when it was potentially occupied by a UAS. Avoidance could be accomplished by flying above or around the COA airspace.

### ***3.21.2.3 Alternative 3: Additional Facilities Construction***

Under Alternative 3, the processes and procedures for military and civilian aircraft operations in Class A, and Class D airspace currently being used would continue unchanged. The number of sorties conducted would continue at current levels. Operations of the Predator B UAS would be the same as described in Section 3.21.2.2. All of the airspace involved in supporting current military and civilian activities is capable of accommodating those levels of operations.

## 4.0 CUMULATIVE IMPACTS

### 4.1 ACTIVITIES IN THE AREA OF IMPACT

Cumulative impacts to environmental resources result from the incremental effects of an action when combined with other past, present and reasonably foreseeable future projects in the ROI. Cumulative impacts can result from individually minor, but collectively substantial, actions undertaken over a period of time by various agencies (federal, state, and local) or individuals. In accordance with NEPA, a discussion of cumulative impacts resulting from projects that are proposed (or anticipated over the foreseeable future) is required.

To identify cumulative effects, the analysis needs to address two fundamental questions:

1. Does a relationship exist such that affected resource areas of the Proposed Action or alternatives might interact with the affected resource areas of past, present, or reasonably foreseeable actions?
2. If such a relationship exists, then does an EA reveal any potentially significant impacts not identified when the Proposed Action is considered alone?

The scope of the cumulative effects analysis involves both the geographic extent of the effects and the time frame in which the effects could be expected to occur, as well as a description of what resources could potentially be cumulatively affected.

When addressing cumulative impacts on wetlands and waters of the U.S., the geographic extent for the cumulative effects analysis is the watershed in which the Proposed Action and alternatives have the potential to impact, primarily concentrating on past, present and reasonably foreseeable actions on and within GFAFB and the surrounding ecosystem.

When addressing cumulative impacts on noise quality, the geographic extent for the cumulative effects analysis is the ROI in which the Proposed Action and alternatives have the potential to impact, primarily concentrating on past, present and reasonably foreseeable actions on GFAFB and in the surrounding community. The time frame for cumulative effects analysis centers on the timing of the Proposed Action and would continue into the foreseeable future.

The 319 ARW updates facilities at GFAFB on a continual basis. Planning efforts in the ROI include the actions described in this EA, as well as those additional projects that are ongoing, or planned in the vicinity of GFAFB. Additional projects within the ROI are discussed below.

Known actions proposed over the next five years at GFAFB are shown in Table 4-1 and are described below.

**Loss of the KC-135R Mission.** As a result of the 2005 BRAC recommendations, the United States Air Force (USAF) will realign installations such as GFAFB to produce a more efficient and cost effective base structure for achieving national military objectives. In September 2005, the Defense Base Closure and Realignment Commission submitted findings to the President for approval by Congress. The findings became law on November 9, 2005.

The BRAC recommendations for GFAFB included the loss of the KC-135R aircraft from GFAFB. The base will maintain eight to twelve aircraft until 31 December 2010. The loss of KC-135R aircraft is not anticipated to have any environmental impacts to GFAFB or the surrounding areas but some economic impacts are anticipated due to the loss of personnel at GFAFB. It is anticipated that, while minimal, the implementation of the

Proposed Action would offset some of the economic impacts resulting from the loss of the KC-135R mission.

**Beddown of Air Force UASs.** The same BRAC directive that resulted in the loss of the KC-135R aircraft will result in the creation of an active duty/ Air National Guard association unit for the operation of UASs at GFAFB. The USAF is in the process of completing an Environmental Impact Statement (EIS) to evaluate the potential impacts of this BRAC action. It is anticipated that GFAFB would receive up to six Predator and eight Global Hawk unmanned vehicles. In order to carry out the USAF mission to train and operate Predator and Global Hawks at GFAFB, the FAA would be required to create new restricted airspace. The EIS will allow for input from members of the public and interested local, state, and federal agencies. Additional cumulative impact analysis will occur during the EIS process.

**University of North Dakota UAS Training School.** The University of North Dakota plans to establish a UAS Training School in the vicinity of the City of Grand Forks. In order to facilitate UAS training, the university is proposing to establish a number of small training areas in the vicinity of their campus. These training areas would be used by small radio controlled UASs.

**Table 4-1. Proposed Projects at GFAFB**

| Project Name/Description                       | Anticipated Fiscal Year |
|--|-------------------------|
| Loss of the KC-135R Mission                    | 2010                    |
| Beddown of Air Force UASs                      | 2012                    |
| University of North Dakota UAS Training School | Unknown                 |

Source: SAIC, 2007

As an active military installation, GFAFB and its tenant organizations undergo changes in mission and training requirements in response to defense policies, current threats,

and tactical and technological advances, and as such, require new construction, facility improvements, infrastructure upgrades and ongoing maintenance and repairs on a continual basis. Although such known construction and upgrades are a part of the analysis contained in this section, some future requirements cannot be predicted. As those requirements surface, future NEPA analysis would be conducted, as necessary.

#### **4.2 LAND USE**

Given the limited infrastructure improvements in the Proposed Action or alternatives, cumulative impacts on land use are not anticipated.

#### **4.3 GEOLOGY AND SOIL**

Given the limited infrastructure improvements in the Proposed Action or alternatives, cumulative impacts on geology and soil are not anticipated.

#### **4.4 HYDROLOGY AND GROUNDWATER**

Given the limited infrastructure improvements in the Proposed Action or alternatives, cumulative impacts on hydrology and groundwater are not anticipated.

#### **4.5 SURFACE WATERS AND WATERS OF THE U.S.**

Given the limited infrastructure improvements in the Proposed Action or alternatives, cumulative impacts on surface waters and waters of the U.S. are not anticipated.

#### **4.6 FLOODPLAINS**

Given the limited infrastructure improvements in the Proposed Action or alternatives, cumulative impacts on floodplains are not anticipated.

#### **4.7 VEGETATIVE HABITAT**

Given the limited infrastructure improvements in the Proposed Action or alternatives, cumulative impacts on vegetative habitat are not anticipated.

#### **4.8 WILDLIFE HABITAT**

Given the limited infrastructure improvements in the Proposed Action or alternatives, cumulative impacts on wildlife and aquatic habitat are not anticipated.

#### **4.9 THREATENED AND ENDANGERED SPECIES**

Given the limited infrastructure improvements in the Proposed Action or alternatives, cumulative impacts on threatened and endangered species are not anticipated.

#### **4.10 CULTURAL, HISTORICAL, AND ARCHEOLOGICAL RESOURCES**

Given the limited infrastructure improvements in the Proposed Action or alternatives, cumulative impacts on cultural, historical and archeological resources does not warrant further analysis.

#### **4.11 AIR QUALITY**

Activities with the potential for cumulative impacts include the USAF beddown of Predator and Global Hawk UASs beginning in FY09. Construction and operational emissions would include engine exhaust emissions from construction equipment, commuting and material transport; generator emissions; above-ground aviation gasoline storage tank emissions; and Predator and Global Hawk flight operation emissions. Emissions would be short-term or minimal and are not expected to have long-term or adverse impacts.

Emissions expected from the Proposed Action would also be minor and are not expected to have adverse impacts. The USAF beddown of Predator and Global Hawk UASs along with the Proposed Action are not expected to result in significant cumulative impacts to Grand Forks County or AQCR 172.

#### **4.12 NOISE**

In the reasonably foreseeable future, the Air National Guard and Air Force Reserve may deploy UAS at GFAFB (MQ-1 and RQ-4). Noise data for these aircraft are not presently contained in the NOISEMAP database. However, in coordination with the AFCEE, it has been determined that a suitable surrogate for the MQ-1 is a single-engine, variable-pitch propeller piston-driven aircraft, and for the RQ-4, an Embrauer 145 aircraft with operations reduced by 50 percent. Neither of these aircraft creates significant noise, and when coupled with minimal flight activities, would not be expected to significantly impact the region's acoustic environment.

Some construction activity would also be expected with this additional deployment. However, as described above, it would not be expected to create any long-term impacts.

#### **4.13 UTILITIES AND INFRASTRUCTURE**

Given the limited infrastructure improvements in the Proposed Action or alternatives, cumulative impacts on utilities and infrastructure are not anticipated.

#### **4.14 ROADWAYS/TRAFFIC**

Given the limited infrastructure improvements in the Proposed Action or alternatives, cumulative impacts on utilities and infrastructure are not anticipated.

#### **4.15 AESTHETIC AND VISUAL RESOURCES**

Given the limited infrastructure improvements in the Proposed Action or alternatives, cumulative impacts on utilities and infrastructure are not anticipated.

#### **4.16 HAZARDOUS MATERIALS**

Given the limited infrastructure improvements in the Proposed Action or alternatives, cumulative impacts on utilities and infrastructure are not anticipated.

#### **4.17 SOCIOECONOMIC**

Implementation of either of the CBP action alternatives would yield a small incremental socioeconomic effect when combined with potential effects associated with the proposed Air Force UAS beddown at GFAFB. These cumulative effects would involve an additional increase in operations personnel and associated family members at GFAFB, beyond those anticipated under the USAF Proposed Action. The CBP mission would result in an increase of 2.2 percent in Base population to the anticipated increase of 14.0 percent associated with the UAS beddown, for a cumulative increase of 16.2 percent. When evaluated in the context of the greater Grand Forks community, the cumulative population impact of the CBP Proposed Action amounts to a 1.5 percent increase in the county population. A population increase of this size would not be expected to have any noticeable socioeconomic effects in the region. No other reasonably foreseeable future action would yield any socioeconomic effects. Therefore, no significant cumulative effects related to socioeconomic resources are anticipated.

#### **4.18 ENVIRONMENTAL JUSTICE AND PROTECTION OF CHILDREN**

No environmental justice effects are anticipated under implementation of the proposed CBP mission at GFAFB. Furthermore, no environmental justice effects are associated with any other reasonably foreseeable future action at the Base. Therefore, no cumulative consequences are expected to minority or low-income populations under implementation of proposed CBP mission at GFAFB, nor would there be any cumulative effects to the safety or health of children.

#### **4.19 SUSTAINABILITY AND GREENING**

Given the limited infrastructure improvements in the Proposed Action or alternatives, cumulative impacts on utilities and infrastructure are not anticipated.

#### **4.20 HUMAN HEALTH AND SAFETY**

In the reasonably foreseeable future, the Air National Guard and Air Force Reserve may deploy UAS at GFAFB (MQ-1 and RQ-4). Over the last five years, the MQ-1 has demonstrated a Class A mishap rate of 12.35 per 100,000 flying hours, and the RQ-4 has demonstrated a Class A mishap rate of 47.4 per 100,000 flying hours. While these rates may appear high, it should be noted that during that period, the MQ-1 and RQ-4 had only accumulated 34,005 and 843.8 flying hours, respectively. These rates are not atypical of newer aircraft, and, as flight hours accumulate and flight experience is gained, rates are typically substantially reduced.

Some construction activity would also be expected with this additional deployment. However, as described above, it would not be expected to create any long-term impacts.

#### **4.21 AIR SPACE MANAGEMENT AND AIR TRAFFIC CONTROL**

The cumulative actions identified in Section 4.1 may affect airspace management and use. As described in Section 2.2.2 CBP intends to use Class D airspace at GFAFB for the launch and recovery of its Predator B aircraft and also to conduct training. These activities would be conducted after coordination and approval from FAA and in accordance with approved the COAs. The use of GFAFB by the USAF and the Air National Guard to conduct flight operations for Predator A and Global Hawk UAS would slightly increase the number of operations under the control of GFAFB ATC. This action

would also create new Restricted Airspace to the west of the Base for use by the Air National Guard Predator A aircraft.

While this action has not been analyzed for its separate effect of the existing airspace system, there would be an increased use of the Class D airspace at GFAFB that would preclude the transit of the airspace by non-military aircraft. The establishment of new Restricted Airspace for Predator training has the potential to affect general aviation and the limited commercial air traffic (12 flights per week) on V-430 between Grand Forks IAP and Devils Lake airport to the west of the Base. No projected adverse affects are anticipated to airspace management and use with the ATC and FAA coordination anticipated on these proposals.

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## **5.0 MITIGATION MEASURES**

This section of the document outlines measures that would be implemented to reduce or eliminate potential adverse impacts to the human and natural environment. Impacts to construction related impacts may be avoided or minimized by incorporating proper construction techniques, erosion control measures, and structural engineering designs into project development. BMPs would be implemented to minimize potential construction related impacts.

In an effort to further minimize impacts CBP A&M would comply with all applicable federal and state laws, as well as applicable USAF regulations during the implementation of the Proposed Action or alternatives.

### **5.1 SOILS**

Only minimal disturbance of soils would result from the implementation of the Proposed Action. To further minimize impacts to soils BMPs would be utilized to control erosion and sedimentation.

### **5.2 SURFACE WATERS AND WATERS OF THE U.S.**

No direct impacts are anticipated to surface waters and waters of the U.S. BMPs would be utilized to minimize impacts from construction sites. All federal, state, local and USAF regulations would be complied with during implementation of the Proposed Action or Alternative 3 including the utilization of a SWPPP.

### **5.3 VEGETATIVE HABITAT**

Vegetation that is temporarily disturbed due to construction activities would be reseeded upon completion of construction activities.

## **5.4 CULTURAL, HISTORICAL, AND ARCHEOLOGICAL RESOURCES**

No impacts are anticipated to cultural, historical, and archeological resources. In the unlikely event that previously unrecorded or unevaluated cultural resources are encountered during construction, CBP will notify GFAFB immediately, who will manage these resources in accordance with the GFAFB Integrated Cultural Resources Management Plan (HQ AMC 2005), adhering to federal and state laws, as well as USAF regulations.

## **5.5 AIR QUALITY**

Potential increases to criteria pollutants are monitored at GFAFB under their Title V Permit. Should levels of these pollutants approach the NAAQS limits for the region effects to air quality would be reevaluated.

## **5.6 NOISE**

Construction noise would be minimized by planning construction to occur during daylight hours and ensuring that construction vehicles have properly functioning mufflers and that the vehicles are in good working order.

## **5.7 HAZARDOUS MATERIALS**

Disposal of potentially hazardous materials would be handled through GFAFB Waste Management. All such materials would be handled in accordance with applicable Federal, state and local regulations.

If contaminated groundwater is encountered during the hangar construction, it will be managed in accordance with applicable laws and regulations. Appropriate personal protective equipment will be used in such situations.

GFAFB implements BMPs to minimize the potential for contaminants to reach nearby surface waters, and a Storm Water Pollution Prevention Plan (SWPPP) that includes water quality monitoring.

BMPs and appropriate measures would be strictly adhered to during construction to minimize erosion and control sedimentation.

CBP is responsible for managing these materials in accordance with federal, state, and local regulations to protect their employees from occupational exposure to hazardous materials and to protect the public health of the surrounding community. The operating location would be responsible for the safe storage and handling of hazardous materials used in conjunction with all construction and demolition operations. These materials would be delivered to GFAFB in compliance with the Hazardous Materials Transportation Act under 49 CFR.

Therefore, the Proposed Action will not have a long-term impact on the SQG status of GFAFB.

Any asbestos or asbestos containing materials (ACM) encountered during facility demolition would be the responsibility of the 319 ARW and is regulated under National Emission Standards for HAPs to prevent the release of asbestos fibers due to damage and disturbance of asbestos-containing materials. Exposed friable asbestos would be removed in accordance with USAF policy and applicable health laws, regulations, and standards.

It is recognized that Building 600 has the potential to contain asbestos. Therefore, all construction debris associated with Hangar 600 will be disposed of in accordance with applicable federal, state, and USAF regulations.

Sustainable design concepts emphasize state-of-the-art strategies for site development, efficient water and energy use and improved indoor environmental quality.

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## 7.0 ACRONYMS/ABBREVIATIONS

|                   |  |
|-------------------|--|
| µg/m <sup>3</sup> | micrograms per cubic meter                           |
| 319 ARW           | 319 <sup>th</sup> Air Refueling Wing                 |
| AAQS              | ambient air quality standards                        |
| ACM               | asbestos containing materials                        |
| AFCEE             | Air Force Center for Engineering and the Environment |
| AFI               | Air Force Instruction                                |
| AGE               | Aircraft Ground Equipment                            |
| A&M               | Air and Marine                                       |
| AQCR              | Air Quality Control Region                           |
| AMOC              | Air and Marine Operations Center                     |
| ARTCC             | Air Route Traffic Control Centers                    |
| ARW               | Air Refueling Wing                                   |
| AST               | above ground storage tank                            |
| ATC               | Air Traffic Control                                  |
| ATCAA             | Air Traffic Control Assigned Airspace                |
| AT/FP             | anti-terrorism / force protection                    |
| bgs               | below ground surface                                 |
| BLOS              | beyond line of site                                  |
| BRAC              | Base Realignment and Closure                         |
| BMPs              | Best Management Practices                            |
| CAA               | Clean Air Act  |
| CBP               | U.S. Customs and Border Protection                   |
| CEQ               | Council on Environmental Quality                     |
| CFR               | Code of Federal Regulations                          |
| CO                | carbon monoxide                                      |
| COA               | Certificate of Authorization                         |
| CWA               | Clean Water Act                                      |
| dB                | decibel  |
| dBA               | A-weighted decibels                                  |
| DHS               | Department of Homeland Security                      |
| DoD               | Department of Defense                                |
| DOL               | Department of Labor                                  |
| EA                | Environmental Assessment                             |
| EIS               | Environmental Impact Statement                       |
| EO                | Executive Order                                      |

**ACRONYMS/ABBREVIATIONS (CONT'D)**

|                     |   |
|---------------------|---|
| FAA                 | Federal Aviation Administration                           |
| FL                  | Flight Level  |
| FONSI               | Finding of No Significant Impact                          |
| FY                  | Fiscal Year   |
| GCS                 | Ground Control System                                     |
| GDT                 | Ground Data Terminal                                      |
| GFAFB               | Grand Forks Air Force Base                                |
| HAP                 | hazardous air pollutant                                   |
| Hz                  | hertz   |
| IAP                 | International Airport                                     |
| ICRMP               | Integrated Cultural Resources Management Plan             |
| IFR                 | Instrument Flight Rules                                   |
| IICEP               | Intergovernmental Coordination for Environmental Planning |
| IRP                 | Installation Restoration Program                          |
| J-                  | Jet Route   |
| L <sub>dn</sub>     | Day-Night Average Sound Level                             |
| L <sub>eq</sub>     | Equivalent Noise Level                                    |
| L <sub>eq(8)</sub>  | Equivalent Noise Level 8 hours                            |
| L <sub>eq(24)</sub> | Equivalent Noise Level 24 hours                           |
| L <sub>max</sub>    | maximum sound level                                       |
| LRE                 | Launch and Recovery Element                               |
| MOA                 | Military Operations Area                                  |
| MSL                 | Mean Sea Level  |
| NAAQS               | National Ambient Air Quality Standards                    |
| NAS                 | National Airspace System                                  |
| NDDH                | North Dakota Department of Health                         |
| NDNHP               | North Dakota Natural Heritage Program                     |
| NEI                 | National Emissions Inventory                              |
| NEPA                | National Environmental Policy Act                         |
| NHPA                | National Historic Preservation Act                        |
| NO <sub>x</sub>     | nitrogen oxide  |
| NO <sub>2</sub>     | nitrogen dioxide  |
| PM <sub>2.5</sub>   | particulate matter < 2.5 microns                          |
| PM <sub>10</sub>    | particulate matter <10 microns                            |
| Pb                  | lead  |
| NRHP                | National Register of Historic Places                      |

**ACRONYMS/ABBREVIATIONS (CONT'D)**

|                   |   |
|-------------------|---|
| NWR               | National Wildlife Refuge                      |
| O <sub>3</sub>    | ozone   |
| OWS               | oil/water separator                           |
| PM <sub>2.5</sub> | particulate matter < 2.5 microns              |
| PM <sub>10</sub>  | particulate matter <10 microns                |
| Pb                | lead  |
| ppm               | parts per million                             |
| PSD               | prevention of significant deterioration       |
| RCRA              | Resource Conservation Recovery Act            |
| RCNM              | Roadway Construction Noise Model              |
| ROI               | Region of Influence                           |
| SEL               | Sound Exposure Level                          |
| SHPO              | State Historic Preservation Officer           |
| SIP               | State Implementation Plan                     |
| SPCC              | Spill Prevention, Control and Countermeasure  |
| SO <sub>2</sub>   | sulfur dioxide                                |
| SO <sub>x</sub>   | sulfur oxides                                 |
| SQG               | Small Quantity Generator                      |
| SUA               | Special Use Airspace                          |
| SWPPP             | Storm Water Pollution Prevention Plan         |
| TFR               | Temporary Flight Restriction                  |
| TPY               | tons per year                                 |
| UAPO              | Unmanned Aircraft Program Office              |
| UAS               | Unmanned Aircraft System                      |
| UND               | University of North Dakota                    |
| U.S.              | United States                                 |
| USACE             | United States Army Corps of Engineers         |
| USAF              | United States Air Force                       |
| USBC              | U.S. Bureau of the Census                     |
| USC               | United States Code                            |
| USEPA             | United States Environmental Protection Agency |
| USFWS             | United States Fish and Wildlife Service       |
| UST               | Underground Storage Tank                      |
| V-                | Victor Route                                  |
| VFR               | Visual Flight Rules                           |
| VOC               | Volatile Organic Compound                     |

## **ACRONYMS/ABBREVIATIONS (CONT'D)**

|        |   |
|--------|---|
| VOR    | Very-High-Frequency Omnidirectional-Range Radio                             |
| VORTAC | Very-High-Frequency Omnidirectional-Range Radio and Tactical Air Navigation |

## 8.0 LIST OF PREPARERS

This EA has been prepared under the direction of the CBP A&M by SAIC. The individual preparers of this document are listed below.

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B.S. Political Science

Years of Experience: 45

## **APPENDIX A**

### **CORRESPONDENCE**

*(The correspondence letter contained in this appendix is an example of the letter that was sent to the 33 entities listed on the address list contained in this appendix.)*

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U.S. Department of Homeland Security  
Washington, DC 20520



U.S. Customs and  
Border Protection

MAY 23 2008

Nick Chevance  
National Park Service  
601 Riverfront Drive  
Omaha, Nebraska 68102-4226

Reference: U.S. Customs and Border Protection, Office of Air & Marine Unmanned Aircraft System Facility at Grand Forks Air Force Base, North Dakota

Dear Mr. Chevance:

U.S. Customs and Border Protection, Office of Air and Marine (A&M), a component of the Department of Homeland Security (DHS), is preparing an Environmental Assessment (EA) for the beddown and flight operations of Unmanned Aircraft System (UAS) at Grand Forks Air Force Base (GFAFB) in North Dakota. CBP has the responsibility of protecting the nation's borders against the illegal entry of terrorists and terrorist weapons and to enforce the laws that protect the U.S. homeland. In support of this mission, CBP proposes the beddown of Predator B UASs at GFAFB, North Dakota. Components of the beddown considered in the proposed EA include the construction of supporting infrastructure at GFAFB and daily UAS flight operations.

This EA is being prepared in accordance with the Council on Environmental Quality regulations to comply with the National Environmental Policy Act (NEPA) of 1969 and DHS Management Directive 5100.1, *Environmental Planning Program*.

The U.S. Air Force is also proposing to bedown UASs at GFAFB. While both actions are occurring at GFAFB, CBP and the U.S. Air Force actions are separate and independent. As independent actions, the two projects will be evaluated in separate environmental planning documents.

CBP UAS flight operations will include training operations within the GFAFB Class "D" airspace and operations along the U.S. border from the center of the State of Minnesota westward into Washington State. The UASs would be operated in "Class A" airspace in this area.

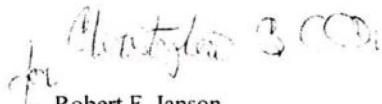
Nick Chevance  
Page 2

Although no new airspace or restricted airspace will be created as part of this action, a temporary flight restriction would occur in the vicinity of GFAFB when UASs transition from Class D to Class A airspace. Infrastructure modifications at GFAFB would include alterations to an existing hangar, minor renovations to the interior of an existing building to accommodate launch and recover ground control equipment, and the potential construction of a new hangar. Additional details on flight operations and infrastructure modifications will be included in the Draft EA.

The purpose of this letter is to notify you and your agency that an EA is being prepared and to provide an early opportunity for you to comment on the CBP project. In addition to this coordination letter, interested parties will have an opportunity to view and comment on the Draft EA. Should you wish to receive a copy of the Draft EA (DEA), please include that information with your response to this letter.

If you have any questions or require additional information, please contact Christopher Oh, Acting Director of the CBP Environmental Division, at (202) 344-2448 or by e-mail at [Christopher.Oh@dhs.gov](mailto:Christopher.Oh@dhs.gov). Please submit your written comments to U.S. Customs and Border Protection, Attn: Christopher Oh, 1300 Pennsylvania Avenue, NW, Room 3.4D, Washington, DC 20229.

Sincerely,



Robert F. Janson  
Acting Executive Director  
Facilities Management and Engineering

**Distribution List for the Correspondence Letter for the CBP EA to Support the Beddown and Flight Operations of Unmanned Aircraft Systems (UASs) at Grand Forks Air Force Base, North Dakota**

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|  |   |
|--|---|
| Ms. Rosemary Berens, THPO<br>Bois Forte Band of Chippewa Indians<br>5344 Lakeshore Drive, P.O. Box 16<br>Nett Lake, MN 55772<br>218-757-3261         | Ms. Audrey Kohnen<br>Tribal Chairperson<br>Prairie Island Community Council<br>5636 Sturgeon Lake Road<br>Welch, MN 55089   |
| Mr. Gerald F. Brun<br>Tribal Chairman<br>Red Lake Band of Chippewa Indians<br>PO Box 550<br>Red Lake, MN 56671                                       | Mr. Larry Knudtson, Research Analyst<br>North Dakota State Water Commission<br>900 E Boulevard Ave, Dept 770<br>Bismarck, ND 58505-0850<br>Phone 701-328-2750<br>FAX 701-328-3696 |
| Dr. Terry Dwelle<br>State Health Officer<br>North Dakota Department of Health<br>600 East Boulevard Ave<br>Bismarck, ND 58505-0200                   | Ms. Ann Larsen<br>Tribal President<br>Lower Sioux Indian Community Council<br>39527 Res Highway 1<br>P.O Box 308<br>Morton, MN 56270  |
| Mr. Russell Eagle Bear, THPO<br>Rosebud Sioux Tribe of Indians<br>P.O. Box 809<br>Rosebud, SD 57570<br>605-747-4225                                  | Mr. Albert LeBeau<br>Tribal Historic Preservation Officer<br>Cheyenne River Sioux Tribe<br>P.O. Box 590<br>Eagle Butte, SD 57625<br>(605) 964-7554                                |
| Mr. Brady Grant, Tribal Historic<br>Preservation Officer<br>Turtle Mountain Band of Chippewa<br>P.O. Box 900<br>Belcourt, ND 58316<br>(701) 477-2641 | Mr. Phillip "Skip" Longie<br>Tribal Chairman<br>Spirit Lake Tribal Council<br>P.O Box 359<br>Fort Totten, ND 58335  |

**Distribution List for the Correspondence Letter for the CBP EA to Support the Beddown and Flight Operations of Unmanned Aircraft Systems (UASs) at Grand Forks Air Force Base, North Dakota**

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|   |  |
|---|--|
| Mr. Tom McCauley, THPO<br>White Earth Band of Minnesota Chippewa<br>P. O. Box 418<br>White Earth, MN 56591<br>(218) 983-3263  | Ms. Deborah A. Painte<br>Indian Affairs Commission<br>600 E Boulevard<br>Bismarck, ND 58505-0300   |
| Ms. Aloma McGaa, THPO<br>Sisseton-Wahpeton Oyate<br>P.O. Box 707<br>Agency Village, SD 57262<br>650-698-3966  | Ms. Gina Papasodora, THPO<br>Leech Lake Band of Chippewa Indians<br>6530 Hwy 2 NW<br>Cass Lake, MN 56633<br>(218) 335-2940   |
| Mr. Tim Mentz, Tribal Preservation Officer<br>Standing Rock Sioux Tribe<br>P.O. Box D<br>Fort Yates, ND 58538<br>(701) 854-2120<br>tmentz@westriv.com                                   | Mr. Jeffrey K. Towner, Field Supervisor<br>U. S. Fish and Wildlife Service<br>North Dakota Field Office<br>3425 Miriam Avenue<br>Bismarck, ND 58501-7926<br>Jeffrey_towner@fws.gov |
| Mr. Terry Steinwand<br>Commissioner<br>North Dakota Game and Fish<br>100 North Bismarck Expressway<br>Bismarck, ND 58501<br>tsteinwa@state.nd.us  | Ms. Pemina Yellow Bird, THPO<br>Mandan, Hidatsa & Arikara Nation<br>404 Frontage Road<br>New Town, ND 58763<br>701-627-4781  |
| Mr. Merlan E. Paaverud<br>State Historic Preservation Officer<br>State Historical Society of North Dakota<br>612 East Boulevard Ave<br>Bismarck, ND 58505-0200<br>mpaaverud@state.nd.us | Ms. Natalie Weyaus, Tribal Preservation Officer<br>Mille Lacs Band of Ojibwe Indians<br>43408 Odena Drive<br>Onamia, MN 56359<br>(320) 532-4181<br>nataliew@millelacojibwe.nsn.us  |

**Distribution List for the Correspondence Letter for the CBP EA to Support the Beddown and Flight Operations of Unmanned Aircraft Systems (UASs) at Grand Forks Air Force Base, North Dakota**

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|   |   |
|---|---|
| <b>STATE CLEARING HOUSE:</b>  | EPA Region 8 Office   |
| North Dakota Division of Community Services   | Ms. Dana Allen<br>Mailcode 8EPR-N<br>1595 Wynkoop Street<br>Denver, CO 80202-1129   |
| Century Center<br>1600 East Century Avenue, Suite 2<br>P.O Box 2057<br>Bismarck, ND 58503<br>(701) 328-5300<br>Fax (701) 328-5320<br>dcs@state.nd.us  | Mr. Steve Best<br>Turtle River State Park<br>3084 Park Avenue<br>Arvilla, ND 58214  |
| Mr. Roger McGrath<br>Federal Aviation Administration,<br>Central Services Area, System Support Group<br>2601 Meacham Blvd<br>Fort Worth, Texas, 76137 | Gary R. Ness, Executive Director<br>North Dakota Aeronautics Commission<br>2301 University Drive, Bldg. 1652-22<br>P.O. Box 5020<br>Bismarck, N.D. 58502-5020 |
| Mr. Doug Hevenor<br>International Peace Garden<br>RR 1, Box 116<br>Dunseith, ND 58329   | Western Air Defense Sector<br>Attn: DOSA<br>852 Lincoln Blvd<br>McChord AFB 98438-1317  |
| General Al Palmer<br>Department of Aviation<br>University of North Dakota<br>2784 Airport Drive<br>Grand Forks, ND 58203                              | Mr. Kelly Nelson<br>FAA Minneapolis Air Route Traffic Control Center<br>6020 28th Ave. S Ste. 201<br>Minneapolis, Minnesota 55450-2704                        |
| U.S. Army Corps of Engineers<br>Mr. Dan Cimarosti<br>North Dakota Regulatory Office<br>1513 South 12th Street<br>Bismarck, North Dakota 58504         | Federal Aviation Administration<br>Manager Requirements, Airspace and Procedures<br>1020 North Flyer Way<br>Salt Lake City, Utah 84116-2959                   |

**Distribution List for the Correspondence Letter for the CBP EA to Support the Beddown and Flight Operations of Unmanned Aircraft Systems (UASs) at Grand Forks Air Force Base, North Dakota**

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Federal Aviation Administration

Manager Requirements, Airspace and  
Procedures

3180 NW 229th Avenue  
Hillsboro, Oregon 97124

Nick Chevance

National Park Service  
601 Riverfront Drive  
Omaha, NE 68102-4226



John Hoeven  
Governor of North Dakota

June 3, 2008

North Dakota  
State Historical Board

Albert I. Berger  
Grand Forks - President  
Chester E. Nelson, Jr.  
Bismarck - Vice President

Gereld Gerntholz  
Valley City - Secretary

A. Ruric Todd III  
Jamestown

Diane K. Larson  
Bismarck

Marvin L. Kaiser  
Williston

Richard Kloubec  
Fargo

Sara Otte Coleman  
Director  
Tourism Division

Kelly Schmidt  
State Treasurer

Alvin A. Jaeger  
Secretary of State

Douglas Prchal  
Director  
Parks and Recreation  
Department

Francis Ziegler  
Director  
Department of Transportation

Merlan E. Paaverud, Jr.  
Director

Accredited by the  
American Association  
of Museums

U.S. Customs and Border Protection  
Attn.: Mr. Christopher Oh  
Acting Director of the CBP Environmental Div  
1300 Pennsylvania Avenue, NW, Room 34D  
Washington DC 20229

ND SHPO REF.:08-0866 U.S. Customs and Border Protection, Office of Air & Marine Unmanned Aircraft System Facility at Grand Forks Air Force Base, North Dakota

Dear Mr. Oh:

We reviewed your preliminary information regarding ND SHPO REF.:08-0866 U.S. Customs and Border Protection, Office of Air & Marine Unmanned Aircraft System Facility at Grand Forks Air Force Base, North Dakota. We request a copy of the Draft EA, which can be sent via e-mail to [squinnell@nd.gov](mailto:squinnell@nd.gov) or in hard copy.

Please include the ND SHPO Reference number listed above in further correspondence for this specific project. If you have any questions please contact Susan Quinnell, Review and Compliance Coordinator at (701) 328-3576 or [squinnell@nd.gov](mailto:squinnell@nd.gov)

Sincerely,

Merlan E. Paaverud, Jr.  
State Historic Preservation Officer (North Dakota)  
and  
Director, State Historical Society of North Dakota

- Environmental Coordinator  
National Park Service  
Midwest Regional Office  
601 Riverfront Drive  
Omaha, NE 68102

U.S. Customs and Border Protection  
Attn: Christopher Oh  
1300 Pennsylvania Avenue, NW  
Room 3.4D  
Washington, DC 20229

.....

Re: Unmanned Aircraft System Facility at Grand Forks Air Force Base, North Dakota

We have received your letter of May 23, 2008 concerning the above referenced project.

We have no comment on your proposed actions.

Due to limited staff and the number of requests we receive for early coordination, we ask that companies/agencies assume we will have no comments on projects if they have not heard from us within 30 days of our receipt of the request.

Thank you,

Regional Environmental Coordinator



**NORTH DAKOTA**  
DEPARTMENT *of* **HEALTH**

ENVIRONMENTAL HEALTH SECTION  
Gold Seal Center, 918 E. Divide Ave.  
Bismarck, ND 58501-1947  
701.328.5200 (fax)  
[www.ndhealth.gov](http://www.ndhealth.gov)



---

June 2, 2008

Mr. Christopher Oh, Acting Director  
CBP Environmental Division  
U.S. Customs and Border Protection  
1300 Pennsylvania Avenue NW, Room 3.4D  
Washington, DC 20229

Re: Beddown and Flight Operations of Unmanned Aircraft Systems  
at Grand Forks Air Force Base, Grand Forks County, North Dakota

Dear Mr. Oh:

This department has reviewed the information concerning the above-referenced project submitted to Dr. Terry Dwelle under date of May 23, 2008, with respect to possible environmental impacts.

This department believes that environmental impacts from the proposed construction will be minor and can be controlled by proper construction methods. With respect to construction, we have the following comments:

1. All necessary measures must be taken to minimize fugitive dust emissions created during construction activities. Any complaints that may arise are to be dealt with in an efficient and effective manner.
2. Care is to be taken during construction activity near any water of the state to minimize adverse effects on a water body. This includes minimal disturbance of stream beds and banks to prevent excess siltation, and the replacement and revegetation of any disturbed area as soon as possible after work has been completed. Caution must also be taken to prevent spills of oil and grease that may reach the receiving water from equipment maintenance, and/or the handling of fuels on the site. Guidelines for minimizing degradation to waterways during construction are attached.
3. Projects disturbing one or more acres are required to have a permit to discharge storm water runoff until the site is stabilized by the reestablishment of vegetation or other permanent cover. Further information on the storm water permit may be obtained from the Department's website or by calling the Division of Water Quality (701-328-5210). Also, cities may impose additional requirements and/or specific best management practices for construction affecting their storm drainage system. Check with the local officials to be sure any local storm water management considerations are addressed.
4. All necessary measures must be taken to minimize the disturbance of any asbestos-containing material and to prevent any asbestos fiber release episodes. Any facility that is to be renovated or demolished must be inspected for asbestos. Notification of the Department's Division of Air Quality (701-328-5188) is required before any demolition. Removal of any

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|  |  |   |   |  |
|--|--|---|---|--|
| Environmental Health<br>Section Chief's Office<br>701.328.5150 | Division of<br>Air Quality<br>701.328.5188 | Division of<br>Municipal Facilities<br>701.328.5211 | Division of<br>Waste Management<br>701.328.5166 | Division of<br>Water Quality<br>701.328.5210 |
|--|--|---|---|--|

*Printed on recycled paper.*

Mr. Christopher Oh

2.

June 2, 2008

friable asbestos-containing material must be accomplished in accordance with section 33-15-13-02 of the North Dakota air pollution control rules.

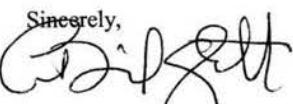
5. Noise from construction activities may have adverse effects on persons who live near the construction area. Noise levels can be minimized by ensuring that construction equipment is equipped with a recommended muffler in good working order. Noise effects can also be minimized by ensuring that construction activities are not conducted during early morning or late evening hours.
6. All solid waste materials must be managed and transported in accordance with the state's solid and hazardous waste rules. Appropriate efforts to reduce, reuse and/or recycle waste materials are strongly encouraged. As appropriate, segregation of inert waste from non-inert waste can generally reduce the cost of waste management. Further information on waste management and recycling is available from the Department's Division of Waste Management at (701) 328-5166.

The department owns no land in or adjacent to the proposed improvements, nor does it have any projects scheduled in the area. In addition, we believe the proposed activities are consistent with the State Implementation Plan for the Control of Air Pollution for the State of North Dakota.

These comments are based on the information provided about the project in the above-referenced submittal. The U.S. Army Corps of Engineers may require a water quality certification from this department for the project if the project is subject to their Section 404 permitting process. Any additional information which may be required by the U.S. Army Corps of Engineers under the process will be considered by this department in our determination regarding the issuance of such a certification.

If you have any questions regarding our comments, please feel free to contact this office. We are interested in reviewing the Draft Environmental Assessment. Upon its completion, please mail a copy to:

Mr. L. David Glatt, Chief  
Environmental Health Section  
North Dakota Department of Health  
918 East Divide Avenue, 4<sup>th</sup> Floor  
Bismarck, ND 58501-1947

Sincerely,  


L. David Glatt, P.E., Chief  
Environmental Health Section

LDG:cc  
Attach.



**NORTH DAKOTA**  
DEPARTMENT of **HEALTH**

ENVIRONMENTAL HEALTH SECTION  
Gold Seal Center, 918 E. Divide Ave.  
Bismarck, ND 58501-1947  
701.328.5200 (fax)  
[www.ndhealth.gov](http://www.ndhealth.gov)



### **Construction and Environmental Disturbance Requirements**

These represent the minimum requirements of the North Dakota Department of Health. They ensure that minimal environmental degradation occurs as a result of construction or related work which has the potential to affect the waters of the State of North Dakota. All projects will be designed and implemented to restrict the losses or disturbances of soil, vegetative cover, and pollutants (chemical or biological) from a site.

#### **Soils**

Prevent the erosion of exposed soil surfaces and trapping sediments being transported. Examples include, but are not restricted to, sediment dams or berms, diversion dikes, hay bales as erosion checks, riprap, mesh or burlap blankets to hold soil during construction, and immediately establishing vegetative cover on disturbed areas after construction is completed. Fragile and sensitive areas such as wetlands, riparian zones, delicate flora, or land resources will be protected against compaction, vegetation loss, and unnecessary damage.

#### **Surface Waters**

All construction which directly or indirectly impacts aquatic systems will be managed to minimize impacts. All attempts will be made to prevent the contamination of water at construction sites from fuel spillage, lubricants, and chemicals, by following safe storage and handling procedures. Stream bank and stream bed disturbances will be controlled to minimize and/or prevent silt movement, nutrient upsurges, plant dislocation, and any physical, chemical, or biological disruption. The use of pesticides or herbicides in or near these systems is forbidden without approval from this Department.

#### **Fill Material**

Any fill material placed below the high water mark must be free of top soils, decomposable materials, and persistent synthetic organic compounds (in toxic concentrations). This includes, but is not limited to, asphalt, tires, treated lumber, and construction debris. The Department may require testing of fill materials. All temporary fills must be removed. Debris and solid wastes will be removed from the site and the impacted areas restored as nearly as possible to the original condition.

---

Environmental Health  
Section Chief's Office  
701.328.5150

Division of  
Air Quality  
701.328.5188

Division of  
Municipal Facilities  
701.328.5211

Division of  
Waste Management  
701.328.5166

Division of  
Water Quality  
701.328.5210

*Printed on recycled paper.*



REPLY TO  
ATTENTION OF

**DEPARTMENT OF THE ARMY**  
CORPS OF ENGINEERS, OMAHA DISTRICT  
NORTH DAKOTA REGULATORY OFFICE  
1513 SOUTH 12<sup>TH</sup> STREET  
BISMARCK ND 58504-6640

June 2, 2008

North Dakota Regulatory Office

U.S. Customs and Border Protection  
Attn: Christopher Oh  
1300 Pennsylvania Avenue  
NW, Room 3.4D  
Washington, DC 20229

Dear Mr. Oh:

This is in response to your letter received **May 27, 2008**, requesting Department of the Army (DA), U.S. Army Corps of Engineers (Corps) comments on behalf of the Grand Forks Air Force Base (GFAFB) in Grand Forks, North Dakota. The project proposes the beddown of Predator B UASs at GFAFB.

Corps regulatory offices administer Section 10 of the Rivers and Harbors Act and Section 404 of the Clean Water Act. Section 10 of the Rivers and Harbors Act regulates work affecting navigable waters; work could be over, through, or under navigable waters. Section 404 of the Clean Water Act regulates the discharge of dredge or fill material (temporarily or permanently) in waters of the United States. Waters of the United States may include, but are not limited to, rivers, streams, ditches, coulees, lakes, ponds, and their adjacent wetlands. Fill material includes, but is not limited to, rock, sand, soil, clay, plastics, construction debris, wood chips, overburden from mines or other excavation activities and materials used to create any structure or infrastructure in the waters of the United States.

If your proposal would require a Section 10 and/or Section 404 permit, please complete and submit the enclosed Corps of Engineers permit application to the U. S. Army Corps of Engineers, North Dakota Regulatory Office, 1513 South 12<sup>th</sup> Street, Bismarck, North Dakota 58504. If you are unsure if a permit is required, you may submit an application, or, a letter requesting a jurisdictional determination. Include a project location map, description of work, and construction methodology when submitting either.

If we can be of further assistance or should you have any questions regarding our program, please do not hesitate to contact this office by letter or phone at (701) 255-0015.

Sincerely,

Daniel E. Cimarosti  
Regulatory Program Manager  
North Dakota

Enclosure  
-application

Printed on Recycled Paper

**Instructions for Preparing a  
Department of the Army Permit Application**

**Blocks 1 through 4.** To be completed by Corps of Engineers.

**Block 5. Applicant's Name.** Enter the name of the responsible party or parties. If the responsible party is an agency, company, corporation or other organization, indicate the responsible officer and title. If more than one party is associated with the application, please attach a sheet with the necessary information marked **Block 5**.

**Block 6. Address of Applicant.** Please provide the full address of the party or parties responsible for the application. If more space is needed, attach an extra sheet of paper marked Block 6.

**Block 7. Applicant Telephone Number(s).** Please provide the number where you can usually be reached during normal business hours.

**Blocks 8 through 11.** To be completed if you choose to have an agent.

**Block 8. Authorized Agent's Name and Title.** Indicate name of individual or agency, designated by you, to represent you in this process. An agent can be an attorney, builder, contractor, engineer or any other person or organization. Note: An agent is not required.

**Blocks 9 and 10. Agent's Address and Telephone Number.** Please provide the complete mailing address of the agent, along with the telephone number where he/she can be reached during normal business hours.

**Block 11. Statement of Authorization.** To be completed by applicant if an agent is to be employed.

**Block 12. Proposed Project Name or Title.** Please provide name identifying the proposed project (i.e., Landmark Plaza, Burned Hills Subdivision or Edsall Commercial Center).

**Block 13. Name of Waterbody.** Please provide the name of any stream, lake, marsh or other waterway to be directly impacted by the activity. If it is a minor (no name) stream, identify the waterbody the minor stream enters.

**Block 14. Proposed Project Street Address.** If the proposed project is located at a site having a street address (not a box number), please enter here.

**Block 15. Location of Proposed Project.** Enter the county and state where the proposed project is located. If more space is required, please attach a sheet with the necessary information marked Block 15.

**Block 16. Other Location Descriptions.** If available, provide the Section, Township and Range of the site and/or the latitude and longitude. You may also provide description of the proposed project location, such as lot numbers, tract numbers or you may choose to locate the proposed project site from a known point (such as the right descending bank of Smith Creek, one mile down from the Highway 14 bridge). If a large river or stream, include the river mile of the proposed project site if known.

**Block 17. Directions to the Site.** Provide directions to the site from a known location or landmark. Include highway and street numbers as well as names. Also provide distances from known locations and any other information that would assist in locating the site.

**Block 18. Nature of Activity.** Describe the overall activity or project. Give appropriate dimensions of structures such as wingwalls, dikes (identify the materials to be used in construction, as well as the methods by which the work is to be done), or excavations (length, width, and height). Indicate whether discharge of dredged or fill material is involved. Also, identify any structure to be constructed on a fill, piles or float supported platforms.

The written descriptions and illustrations are an important part of the application. Please describe, in detail, what you wish to do. If more space is needed, attach an extra sheet of paper marked Block 18.

**Block 19. Proposed Project Purpose.** Describe the purpose and need for the proposed project. What will it be used for and why? Also include a brief description of any related activities to be developed as the result of the proposed project. Give the approximate dates you plan to both begin and complete all work.

**Block 20. Reason(s) for Discharge.** If the activity involves the discharge of dredged and/or fill material into a wetland or other waterbody, including the temporary placement of material, explain the specific purpose of the placement of the material (such as erosion control).

**Block 21. Type(s) of Material Being Discharged and the Amount of Each Type in Cubic Yards.** Describe the material to be discharged and amount of each material to be discharged within Corps jurisdiction. Please be sure this description will agree with your illustrations. Discharge material includes: rock, sand, clay, concrete, etc.

**Block 22. Surface Areas of Wetlands or Other Waters Filled.** Describe the area to be filled at each location. Specifically identify the surface areas, or part thereof, to be filled. Also include the means by which the discharge is to be done (backhoe, dragline, etc.). If dredged material is to be discharged on an upland site, identify the site and the steps to be taken (if necessary) to prevent runoff from the dredged material back into a waterbody. If more space is needed, attach an extra sheet of paper marked Block 22.

**Block 23. Is Any Portion of the Work Already Complete?** Provide any background on any part of the proposed project already completed. Describe the area already developed, structures completed, any dredged or fill material already discharged, the type of material, volume in cubic yards, acres filled, if a wetland or other waterbody (in acres or square wet). If tile work was done under an existing Corps permit, identify the authorization if possible.

**Block 24. Names and Addresses of Adjoining Property Owners, Lessees, etc., Whose Property Adjoins the Project Site.** List complete names and full mailing addresses of the adjacent property owners (public and private) lessees, etc., whose property adjoins the waterbody or aquatic site where the work is being proposed so that they may be notified of the proposed activity (usually by public notice). If more space is needed, attach an extra sheet of paper marked Block 24.

**Information regarding adjacent landowners is usually available through the office of the tax assessor in the county of counties where the project is to be developed.**

**Block 25. Information about Approvals or Denials by Other Agencies.** You may need the approval of other Federal, state or local agencies for your project. Identify any applications you have submitted and the status, if any (approved or denied) of each application. You need not have obtained all other permits before applying for a Corps permit.

**Block 26. Signature of Applicant or Agent.** The application must be signed by the owner or other authorized party (agent). This signature shall be an affirmation that the party applying for the permit possesses the requisite property rights to undertake the activity applied for (including compliance with special conditions, mitigation, etc.).

#### DRAWINGS AND ILLUSTRATIONS

General Information.

Three types of illustrations are needed to properly depict the work to be undertaken. These illustrations or drawings are identified as a **Vicinity Map**, a **Plan View** or a **Typical Cross-Section Map**. Identify each illustration with a figure or attachment number.

Please submit one original, or good quality copy, of all drawings on 8 1/2x11 inch plain white paper (tracing paper or film may be substituted). Use the fewest number of sheets necessary for your drawings or illustrations.

Each illustration should identify the project, the applicant, and the type of illustration (vicinity map, plan view or cross-section). **While illustrations need not be professional (many small, private project illustrations are prepared by hand), they should be clear, accurate and contain all necessary information.**

|   |                      |  |
|---|----------------------|--|
| APPLICATION FOR DEPARTMENT OF THE ARMY PERMIT<br>(33 CFR 325)   |                      | OMB APPROVAL NO. 0710-0003<br>Expires December 31, 2004                |
| <p>The Public burden for this collection of information is estimated to average 10 hours per response, although the majority of applications should require 5 hours or less. This includes the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Department of Defense, Washington Headquarters Service Directorate of Information Operations and Reports, 1215 Jefferson Davis Highway, Suite 1204, Arlington, VA 22202-4302; and to the Office of Management and Budget, Paperwork Reduction Project (0710-0003), Washington, DC 20503. Respondents should be aware that notwithstanding any other provision of law, no person shall be subject to any penalty for failing to comply with a collection of information if it does not display a currently valid OMB control number. Please DO NOT RETURN your form to either of those addresses. Completed applications must be submitted to the District Engineer having jurisdiction over the location of the proposed activity.</p> |                      |  |
| <b>PRIVACY ACT STATEMENT</b>  |                      |  |
| <p>Authorities: Rivers and Harbors Act, Section 10, 33 USC 403; Clean Water Act, Section 404, 33 USC 1344; Marine Protection, Research and Sanctuaries Act, 33 USC 1413, Section 103. Principal Purpose: Information provided on this form will be used in evaluating the application for a permit. Routine Uses: This information may be shared with the Department of Justice and other federal, state, and local government agencies. Submission of requested information is voluntary, however, if information is not provided the permit application cannot be evaluated nor can a permit be issued.</p> <p>One set of original drawings or good reproducible copies which show the location and character of the proposed activity must be attached to this application (see sample drawings and instructions) and be submitted to the District Engineer having jurisdiction over the location of the proposed activity. An application that is not completed in full will be returned.</p>   |                      |  |
| (ITEMS 1 THRU 4 TO BE FILLED BY THE CORPS)  |                      |  |
| 1. APPLICATION NO.  | 2. FIELD OFFICE CODE | 3. DATE RECEIVED   |
| (ITEMS BELOW TO BE FILLED BY APPLICANT)   |                      |  |
| 5. APPLICANT'S NAME   |                      | 8. AUTHORIZED AGENT'S NAME AND TITLE <i>(an agent is not required)</i> |
| 6. APPLICANT'S ADDRESS  |                      | 7. AGENT'S ADDRESS   |
| 7. APPLICANT'S PHONE NOS. W/AREA CODE   |                      | 10. AGENT'S PHONE NOS. W/AREA CODE                                     |
| a. Residence  |                      | a. Residence   |
| b. Business   |                      | b. Business  |
| 11. STATEMENT OF AUTHORIZATION  |                      |  |
| <p>I hereby authorize _____ to act in my behalf as my agent in the processing of this application and to furnish, upon request, supplemental information in support of this permit application.</p>   |                      |  |
| APPLICANT'S SIGNATURE   |                      | DATE   |
| NAME, LOCATION AND DESCRIPTION OF PROJECT OR ACTIVITY   |                      |  |
| 12. PROJECT NAME OR TITLE <i>(see instructions)</i>   |                      |  |
| 13. NAME OF WATERBODY, IF KNOWN <i>(if applicable)</i>  |                      | 14. PROJECT STREET ADDRESS <i>(if applicable)</i>                      |
| 15. LOCATION OF PROJECT   |                      |  |
| COUNTY  | STATE                |  |
| 16. OTHER LOCATION DESCRIPTIONS, IF KNOWN <i>(see instructions)</i>   |                      |  |
| 17. DIRECTIONS TO THE SITE  |                      |  |

ENG FORM 4345, Jul 97

EDITION OF FEB 94 IS OBSOLETE

(Proponent: CECW-OR)

18. Nature of Activity (*Description of project, include all features*)19. Project Purpose (*Describe the reason or purpose of the project, see instructions*)

USE BLOCKS 20-22 IF DREDGED AND/OR FILL MATERIAL IS TO BE DISCHARGED

20. Reason(s) for Discharge

21. Type(s) of Material Being Discharged and the Amount of Each Type in Cubic Yards

22. Surface Area in Acres of Wetlands or Other Waters Filled (*see instructions*)

23. Is Any Portion of the Work Already Complete? Yes \_\_\_\_\_ No \_\_\_\_\_ IF YES, DESCRIBE THE COMPLETED WORK

24. Addresses of Adjoining Property Owners, Lessees, Etc., Whose Property Adjoins the Waterbody (if more than can be entered here, please attach a supplemental list).

25. List of Other Certifications or Approvals/Denials Received from other Federal, State, or Local Agencies for Work Described in This Application

| AGENCY | TYPE APPROVAL* | IDENTIFICATION NUMBER | DATE APPLIED | DATE APPROVED | DATE DENIED |
|--------|----------------|-----------------------|--------------|---------------|-------------|
|        |                |                       |              |               |             |

\*Would include but is not restricted to zoning, building and flood plain permits

26. Application is hereby made for a permit or permits to authorize the work described in this application. I certify that the information in this application is complete and accurate. I further certify that I possess the authority to undertake the work described herein or am acting as the duly authorized agent of the applicant.

SIGNATURE OF APPLICANT

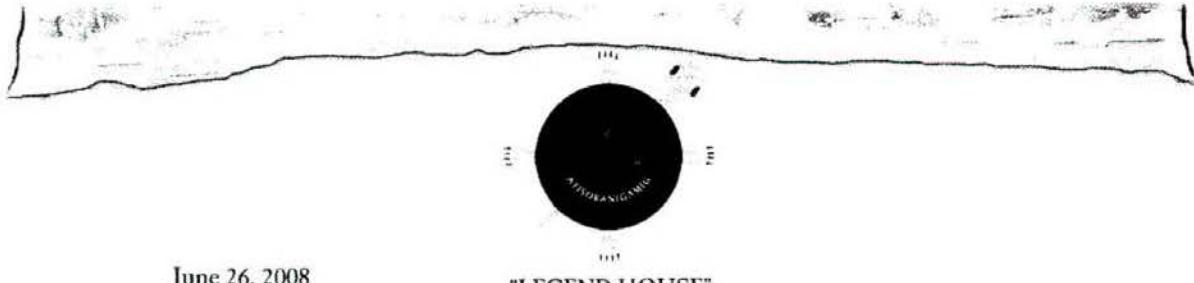
DATE

SIGNATURE OF AGENT

DATE

The application must be signed by the person who desires to undertake the proposed activity (applicant) or it may be signed by a duly authorized agent if the statement in block 11 has been filled out and signed.

18 U.S.C. Section 1001 provides that: Whoever, in any manner within the jurisdiction of any department or agency of the United States knowingly and willfully falsifies, conceals, or covers up any trick, scheme, or disguises a material fact or makes any false, fictitious or fraudulent statements or representations or makes or uses any false writing or document knowing same to contain any false, fictitious or fraudulent statements or entry, shall be fined not more than \$10,000 or imprisoned not more than five years or both.



June 26, 2008

"LEGEND HOUSE"

U.S. Customs and Border Protection, Attn: Christopher Oh  
1300 Pennsylvania Avenue, NW, Room 3.4D  
Washington, DC 20229

**RE: U.S. Customs and Border Protection, Office of Air & Marine Unmanned  
Aircraft System Facility at Grand Forks Air Force Base, North Dakota**

Dear Mr. Oh,

This is not Traditional Bois Forte Territory. Bois Forte does not wish to comment on or view the Draft EA.

Thank you for the opportunity to comment on this project. If you have any questions please contact me at 218-753-6017.

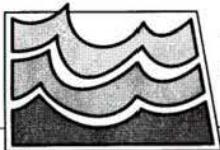
Sincerely,

A handwritten signature in cursive ink that appears to read "Rose Berens".

Rose Berens  
Tribal Historic Preservation Officer  
Bois Forte Band of Ojibwe

Cc Bill Latady  
Deputy THPO





## North Dakota State Water Commission

900 EAST BOULEVARD AVENUE, DEPT 770 • BISMARCK, NORTH DAKOTA 58505-0850  
701-328-2750 • TDD 701-328-2750 • FAX 701-328-3696 • INTERNET: <http://swc.nd.gov>

June 16, 2008

US Customs and Border Services  
Attn: Christopher Oh  
1300 Pennsylvania Avenue NW  
Room 3.4D  
Washington, DC 20229

Dear Mr. Oh:

This is in response to your request for review of environmental impacts associated with the US Customs and Border Protection, Office of Air & Marine Unmanned Aircraft System Facility at Grant Forks Air Force Base, ND.

The proposed project have been reviewed by State Water Commission staff and the following comments are provided:

- The property is not located in an identified floodplain and it is believed the project will not affect an identified floodplain.
- All waste material associated with the project must be disposed of properly and not placed in identified floodway areas.
- No sole-source aquifers have been designated in ND.

There are no other concerns associated with this project that affect State Water Commission or State Engineer regulatory responsibilities.

Thank you for the opportunity to provide review comments. If you have any questions, please call me at 328-4969.

Sincerely,

Larry Knudtson  
Research Analyst

LJK:ds/1570

JOHN HOEVEN, GOVERNOR  
CHAIRMAN

DALE L. FRINK  
SECRETARY AND STATE ENGINEER

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## APPENDIX B

### AGENCY AND PUBLIC COMMENTS ON THE DRAFT EA

*(The following notification was posted in the Grand Forks Herald and the Northern Sentinel. No public comments were received. One agency comment was received.)*

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Northern Sentinel/Friday, June 27, 2008 5

**n Sentinel****ACTIVITIES**

**June 28:** Texas Hold 'em.  
**Aug. 14:** AMC ICON talent contest. Information: 747-4113.

**July 9:** Camping.  
**July 16:** Farms.  
**July 30:** Beach Party.

**Liberty Square**

A multi-purpose facility that hosts classes and indoor sports. It's home to a skateboard park and provides an open roller skating program. The space may be rented for private parties, 747-3429/3151.

BIRTHDAYS: customize with a bouncy castle, roller skating or dancing.

**Library Story Time**

Story Time is held at 10 a.m. on Wednesdays.

Rosetta Stone Online Language Center is available at no charge.

**Outdoor Recreation**

Receive a coupon for 50 cents off a specialty coffee at Fast Eddie's with ODR rental.

**July 12:** Bracket paintball tournament beginning at 2 p.m. Cost is \$80 for 3-4 person team.

**July 23:** Boater Safety course. Information: 747-4280.

**Plainsview Golf Course**

**ACTIVITIES:** See Page 6

**NOTICE OF AVAILABILITY**

**DRAFT ENVIRONMENTAL ASSESSMENT (EA) AND PROPOSED FINDING OF NO SIGNIFICANT IMPACT (FONSI) FOR THE BEDDOWN AND FLIGHT OPERATIONS OF UNMANNED AERIAL SYSTEMS (UAS) AT GRAND FORKS AIR FORCE BASE, NORTH DAKOTA U.S. CUSTOMS AND BORDER PROTECTION AIR AND MARINE**

U.S. Customs and Border Protection (CBP), a component of the Department of Homeland Security (DHS), announces the availability of and invites public comments on a Draft EA and proposed FONSI for the proposed Beddown and UAS Flight Operations Project. Pursuant to the National Environmental Policy Act (NEPA) of 1969, 42 U.S.C. 4321 et seq., CBP has prepared the Draft EA and proposed FONSI to identify and assess the potential impacts associated with the proposed beddown, renovation, construction and flight operations of unmanned aerial systems at Grand Forks Air Force Base in North Dakota.

The Draft EA and proposed FONSI were prepared in accordance with CBP's obligations under NEPA, the Council on Environmental Quality (CEQ) implementing regulations at 40 CFR Parts 1500–1508, and DHS Management Directive 5100.1 (Environmental Planning Program). Copies of the Draft EA and proposed FONSI can be downloaded from the project website at [http://gforks-dhs-ea.saiceemg.com/uas\\_ea\\_home.aspx](http://gforks-dhs-ea.saiceemg.com/uas_ea_home.aspx) under the link Documents tab. Additionally, copies will be available at the following local libraries

|                              |                           |
|------------------------------|---------------------------|
| Libraries for public review: |                           |
| Grand Forks Public Library   | Grand Forks AFB Library   |
| 2110 Library Cir             | 511 Holz Apple Street     |
| Grand Forks, ND 58201        | Grand Forks AFB, ND 58205 |
| Phone (701) 772-8116         | Phone (701) 747-3046      |

Pursuant to the CEQ regulations, CBP invites public participation in the NEPA process. The public may participate by reviewing and submitting comments on the Draft EA and proposed FONSI. The public may submit comments by one of three methods described below. CBP will consider all applicable and pertinent comments submitted during the public comment period, and subsequently will prepare the Final EA. CBP will announce the availability of the Final EA and FONSI.

Comments on the Draft EA and proposed FONSI should be received by **July 23**. Please use only one of the following methods:

- (a) Via the website as listed above under the Comments tab
- (b) By mail to: U.S. Customs and Border Protection, Attn: Christopher Oh, 1300 Pennsylvania Avenue, NW, Room 3.4D, Washington, DC 20229.
- (c) By e-mail to: Christopher.Oh@dhs.gov

When submitting comments, please include your name and address, and identify your comments as being for the Grand Forks Draft EA and proposed FONSI. To request a hard copy of the Draft EA, please use one of the aforementioned contact methods.

ION

Grand Forks Herald, Monday, June 23, 2008

## SCIENCE

# Can the Martian arctic support extreme life?

By Alicia Chang  
Associated Press

**LOS ANGELES** — Bizarre microbes flourish in the most punishing environments on Earth from the bone-dry Atacama Desert in Chile to the boiling hot springs of Yellowstone National Park to the sunless sea bottom vents in the Pacific.

Could such exotic life emerge in the frigid arctic Plains of Mars?

NASA's Phoenix spacecraft could soon find out. Since plodding down near the Martian north pole a month ago, the three-legged lander has been busy poking its long arm into the sticky soil and collecting samples to bake in a test oven and figure out if it's a microbe.

There hasn't been a Europa moment yet. But the Phoenix turned up a promising lead last week when it uncovered what scientists believe are ice flecks in one trench and an icy layer in another.

Scientists hope experiments by the lander will reveal whether Mars has ever been wet and whether there are any organic or carbon-containing compounds.

"We're looking for the basic ingredients that would allow life to prosper in this environment," chief scientist Peter Smith of the University of Arizona in Tucson has said many times. The discovery of extraterrestrial life forms, known as extremophiles, in unexpected nooks and crannies of the Earth in recent years has helped inform scientists in their search for extraterrestrial life.

"It's very suggestive that there are lots of worlds that may support life that at first glance might look like fourth-rate real estate," said Seth Shostak, an astronomer at the SETI Institute, a nonprofit dedicated to the search for extraterrestrial intelligence.

While the possibility for ET seems to grow with new extremophile discoveries on Earth, the truth is that we don't know if life ever evolved on Mars, or if it even exists today.

But if there were past or present life on the red planet — a big if — scientists speculate it would likely be similar to some extreme life on Earth — microscopic and hardy, capable of withstanding colder than Antarctica temperatures and low

pressures.

"It's going to be microbes. It's not going to be a little green man," said Kenneth Stedman, a biologist with the Center for Space Exploration and Environmental Research at Portland State University.

Under a microscope, extremophiles vary in size and shape. Some resemble miniature corkscrews while others are rods or irregular shapes. Scientists use a dye to distinguish the living ones from the dead.

The Phoenix mission has a modest budget of \$420 million. It doesn't carry instruments capable of identifying fossils or living things. Rather, the lander has a set of ovens and a gas analyzer that will heat soil and ice and sniff the resulting vapors for life-friendly elements. Its wet chemistry lab will test the pH, salinity, and temperature much like a gardener would.

And its microscope will examine soil granules for minerals that may indicate past presence of water.

Most living things on Earth thrive not only in the presence of water, but also need sunlight, oxygen and organic carbon. But the range of conditions in which life can survive has been expanded with recent discoveries of micro-organisms

trapped in glaciers and rocks living in volcanic vents and battery acid-like lakes.

These extreme conditions on Earth mirror the harsh environments found on Mars and other parts of the solar system. Present-day Mars is like a desert, with no hint of water on its weathered surface, although studies of rocks suggest the planet was wetter upon a time.

Most researchers agree life likely cannot develop on the Martian surface, which is bombarded by large doses of radiation. But satellite images have revealed a softer side, spiny hints of a vast underground store of ice near the red planet's polar regions. Phoenix last week hit what's thought to be an ice layer 2 inches below the surface.

Even if Phoenix uncovers microbial life in habitable conditions, a more sophisticated spacecraft would be needed to determine if life was ever there or is present now.

The last time NASA looked for organics was during the 1976 twin Viking missions, which sampled soil near the Martian equator but turned up empty.

**On the Net:**  
■ Phoenix Mars:  
<http://phoenix.lpl.arizona.edu/index.php>

## GRAND FORKS CITY COUNCIL AGENDA

Tuesday, June 24, 2008 - 5:30 PM  
Council Chambers

### 1. GENERAL BUSINESS

1.1 Welcome & Roll Call

### 2. ACTION ITEMS

2.1 Recognition of council members

### 3. ADJOURNMENT

3.1 Adjourn sine die

## GRAND FORKS CITY COUNCIL AGENDA

ORGANIZATIONAL MEETINGS

Tuesday, June 24, 2008 - 5:30 PM

Council Chambers

### 1. GENERAL BUSINESS

1.1 Welcome and Roll Call

### 2. ACTION ITEMS

2.1 Administer oaths of office to mayor and council members

2.2 Elect president of the city council

2.3 Elect vice president of the city council

2.4 Appointment of city attorney

### 3. ADJOURNMENT

For a detailed agenda and to view current committee openings,  
[www.grandforkshq.com](http://www.grandforkshq.com)  
This meeting will be broadcast live on cable Channel 2

## NOTICE OF AVAILABILITY

### DRAFT ENVIRONMENTAL ASSESSMENT (EA) AND PROPOSED FINDING OF NO SIGNIFICANT IMPACT (FONSI) FOR THE BEDDOWN AND FLIGHT OPERATIONS OF UNMANNED AERIAL SYSTEMS (UAS) AT GRAND FORKS AIR FORCE BASE, NORTH DAKOTA U.S. CUSTOMS AND BORDER PROTECTION AIR AND MARINE

U.S. Customs and Border Protection (CBP), a component of the Department of Homeland Security (DHS), announces the availability of and invites public comments on a Draft EA and proposed FONSI for the proposed Beddown and UAS Flight Operations Project. Pursuant to the National Environmental Policy Act (NEPA) of 1969, 42 U.S.C. 4321 et seq., CBP has prepared the Draft EA and proposed FONSI to identify and assess the potential impacts associated with the proposed beddown, renovation, construction and flight operations of unmanned aerial systems at Grand Forks Air Force Base in North Dakota.

The Draft EA and proposed FONSI were prepared in accordance with CBP's obligations under NEPA, the Council on Environmental Quality (CEQ) implementing regulations at 40 CFR Parts 1500–1508, and DHS Management Directive 5100.1 (Environmental Planning Program). Copies of the Draft EA and proposed FONSI can be downloaded from the project website at [http://gforks-dhs-ea.saicemg.com/uas\\_ea\\_home.aspx](http://gforks-dhs-ea.saicemg.com/uas_ea_home.aspx) under the link Documents tab. Additionally, copies will be available at the following local libraries

|                              |                            |
|------------------------------|----------------------------|
| Libraries for public review: | Grand Forks Public Library |
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| Grand Forks Public Library | Grand Forks AFB Library |
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| Phone (701) 772-8116 | Phone (701) 747-3046 |
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## NOTICE OF AVAILABILITY

### DRAFT ENVIRONMENTAL ASSESSMENT (EA) AND PROPOSED FINDING OF NO SIGNIFICANT

### IMPACT (FONSI) FOR THE BEDDOWN AND FLIGHT OPERATIONS OF UNMANNED AERIAL SYSTEMS (UAS) AT GRAND FORKS AIR FORCE BASE, NORTH DAKOTA U.S. CUSTOMS AND BORDER PROTECTION AIR AND MARINE

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|------------------------------|---------------------------|
| Grand Forks Public Library   | 511 Holz Apple Street     |
| 2110 Library Cir             | Grand Forks AFB, ND 58205 |
| Grand Forks, ND 58201        | Phone (701) 747-3046      |
| Phone (701) 772-8116         |                           |

Pursuant to the CEQ regulations, CBP invites public participation in the NEPA process. The public may participate by reviewing and submitting comments on the Draft EA and proposed FONSI. The public may submit comments by one of three methods described below. CBP will consider all applicable and pertinent comments submitted during the public comment period, and subsequently will prepare the Final EA. CBP will announce the availability of the Final EA and FONSI.

Comments on the Draft EA and proposed FONSI should be received by **July 23**. Please use only one of the following methods:

(a) Via the website as listed above under the Comments tab

(b) By mail to: U.S. Customs and Border Protection, Attn: Christopher Oh, 1300 Pennsylvania Avenue, NW, Room 3,4D, Washington, DC 20229.

(c) By e-mail to: Christopher.Oh@dhs.gov

When submitting comments, please include your name and address, and identify your comments as being for the Grand Forks Draft EA and proposed FONSI. To request a hard copy of the Draft EA, please use one of the aforementioned contact methods.



STATE  
HISTORICAL  
SOCIETY  
OF NORTH DAKOTA

John Hoeven  
*Governor of North Dakota*

North Dakota  
State Historical Board

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*Grand Forks - President*

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*Director  
Parks and Recreation  
Department*

Francis Ziegler  
*Director  
Department of Transportation*

Merlan E. Paaverud, Jr.  
*Director*

July 18, 2008

U.S. Customs and Border Protection  
Attn.: Mr. Christopher Oh  
Acting Director of the CBP Environmental Div  
1300 Pennsylvania Avenue, NW, Room 34D  
Washington DC 20229

**ND SHPO REF.:08-0866 U.S. Customs and Border Protection, Office of Air & Marine Unmanned Aircraft System Facility at Grand Forks Air Force Base, North Dakota**

Dear Mr. Oh:

We reviewed the information contained on the draft EA website [http://gforks-dhs-ea.saiceema.com/uas\\_ea\\_home.aspx](http://gforks-dhs-ea.saiceema.com/uas_ea_home.aspx). regarding ND SHPO REF.:08-0866 U.S. Customs and Border Protection, Office of Air & Marine Unmanned Aircraft System Facility at Grand Forks Air Force Base, North Dakota.

We have no concerns regarding cultural resources in North Dakota, provided protocols established in Section 5.4 of the draft EA are followed, and provided that borrow/fill/aggregate materials are derived from an approved source, that is one surveyed by an archaeologist and found to contain no significant cultural resources.

Please include the ND SHPO Reference number listed above in further correspondence for this specific project. If you have any questions please contact Susan Quinnell, Review and Compliance Coordinator at (701) 328-3576 or [squinnell@nd.gov](mailto:squinnell@nd.gov)

Sincerely,

Merlan E. Paaverud, Jr.  
State Historic Preservation Officer (North Dakota)  
and  
Director, State Historical Society of North Dakota

Accredited by the  
American Association  
of Museums

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North Dakota Heritage Center • 612 East Boulevard Avenue, Bismarck, ND 58505-0830 • Phone 701-328-2666 • Fax: 701-328-3710  
Email: [histsoc@nd.gov](mailto:histsoc@nd.gov) • Web site: <http://www.nd.gov/hist> TTY: 1-800-366-6888

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## FINDING OF NO SIGNIFICANT IMPACT

### ENVIRONMENTAL ASSESSMENT FOR THE BEDDOWN AND FLIGHT OPERATIONS OF UNMANNED AERIAL SYSTEMS AT GRAND FORKS AIR FORCE BASE, NORTH DAKOTA



U.S. Department of Homeland Security

U.S. Customs and Border Protection

U.S. Border Patrol

Washington, D.C.

*In cooperation with*

U.S. Air Force

Air Mobility Command

Scott AFB, IL

SEPTEMBER 2008

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**FINDING OF NO SIGNIFICANT IMPACT**  
**Environmental Assessment**  
**for the Beddown and Flight Operations of Unmanned Aerial Systems (UAS)**  
**at Grand Forks Air Force Base, North Dakota**  
**U.S. Customs and Border Protection Air and Marine**

The mission of CBP Air and Marine (CBP A&M), the world's largest law enforcement air force, is to protect the American people and Nation's critical infrastructure through the coordinated use of integrated air and marine forces to detect, interdict and prevent acts of terrorism and the unlawful movement of people, illegal drugs and other contraband toward or across the borders of the United States.

This specialized law enforcement capability allows CBP A&M to make significant contributions to the homeland security efforts of DHS, as well as to those of Federal, State, local, and tribal agencies. To accomplish this mission, CBP A&M utilizes over 700 pilots and 267 aircraft including the use of unmanned aircraft systems (UASs), over 130 mariners and over 200 vessels.

This Environmental Assessment (EA) was prepared in compliance with provisions of the National Environmental Policy Act (NEPA) of 1969 as amended (42 U.S.C. 4332, et seq.), the Council on Environmental Quality's (CEQ) NEPA implementing regulations at 40 Code of Federal Regulation (CFR) Part 1500 et seq., and DHS's Environmental Planning Management Directive 5100.1.

This EA has been prepared to present and evaluate the Proposed Action and alternatives, including the No Action Alternative. Resources addressed in the EA include land use, geology and soil, hydrology and groundwater, surface waters, floodplains, vegetative habitat, wildlife and aquatic habitat, threatened and endangered species, cultural, historical, archeological resources, air quality, climate, noise, utilities, roadways,

aesthetic and visual resources, hazardous materials, socioeconomic, environmental justice, sustainability and greening and human health and safety and airspace management. The EA will be made available to the public for comments during report development and at completion. Because the CBP A&M Proposed Action would occur on a United States Air Force (USAF) installation, the USAF and CBP A&M have been working in concert to prepare this EA.

**PROJECT LOCATION:** The proposed location for this Project is Grand Forks Air Force Base (GFAFB) in North Dakota. GFAFB is located in Grand Forks County near the North Dakota-Minnesota border. The Base is adjacent to the City of Emerado, and 15 miles west of the City of Grand Forks.

**PURPOSE AND NEED:** The purpose of this action is to provide adequate and suitable infrastructure on and in the vicinity of Grand Forks Air Force Base (GFAFB), North Dakota to support UAS operations to be conducted by the U.S. DHS, and CBP. An integral part of the successful completion of CBP's mission involves the development, use and management of elements of the National Airspace System (NAS) required to support the flight of Predator B UAS at GFAFB.

CBP A&M has identified the need to establish a UAS operating location along the northern border. GFAFB has been identified as the location for the beddown of up to six Predator B UASs that will be vital to securing the Northern Border of the U.S. The implementation of this mission is a crucial component of DHS's layered approach to border security. The use of UASs in support of these mission requirements serves as a "force-multiplier" for this agency.

**ALTERNATIVES:** Three alternatives were considered: The No Action Alternative, the Proposed Action Alternative and Alternative 3; Additional Facilities Construction. Other alternatives considered but eliminated and not further analyzed in this EA are described below.

Alternative locations considered for the UAS beddown were Bellingham, Washington; Great Falls, Montana; Detroit, Michigan; and Plattsburgh, New York. These locations were considered but not carried forward for analysis in this EA for the following reasons: the limited number of aircraft available in the FY 08-12 timeframe, the centralized location afforded by GFAFB and the available facilities and secure infrastructure at GFAFB. These factors would provide CBP A&M with an optimal location to conduct their initial Northern Border operations. GFAFB's strategic location and proximity to the border along with the synergy of future USAF UAS operations and the opportunity to operate from a non-joint use airfield made GFAFB the ideal location for an initial operational center. As Predator B aircraft become operational, other locations would be separately evaluated for environmental consequences associated with operational beddown decisions.

**Alternate Technologies.** Several project elements that included other technology and infrastructure considerations such as ground sensors and imaging satellites were considered as alternatives to the Proposed Action. However, these alternatives were eliminated from further review due to logistical restrictions and functional deficiencies that fail to meet the purpose and need for this project. These alternatives and reasons for their exclusion from further analysis are described below.

**Remote Sensing Satellites.** Use of remote sensing satellites was eliminated from further evaluation because they present an unacceptable level of reliability and would

present extraordinary design, implementation, operation and maintenance considerations that would fail to provide acceptable visual resolution of the border areas under consideration for this project.

**Increased CBP Workforce Alternative.** Another alternative considered during the planning stages of this project was to increase the number of CBP agents to patrol portions of the northern border in lieu of UAS operations. Such efforts would require an enormous commitment of human resources and new facilities would require construction to accommodate the additional manpower necessary to patrol a given area. In addition, UAS operations can effectively occur throughout the night with little to no potential for injury, accident or death to CBP agents. The human resource and vehicular maintenance, coupled with the resulting depletion of resources, represented too great an environmental impact to be further considered as a reasonable alternative. The disadvantages associated with the additional manpower and vehicle requirements coupled with the resulting depletion of resources and ineffective mission completion did not outweigh the advantages of this alternative. Therefore, this alternative was eliminated from further consideration.

**No Action Alternative.** Under the No-Action Alternative, neither CBP personnel nor any CBP assets would deploy to GFAFB. No airspace management actions or modifications would occur. However, implementation of the No-Action Alternative would impact the successful implementation of the Northern Border mission and impair protection of U.S. national security interests. While the No Action Alternative does not satisfy the stated purpose and need, its inclusion in this EA is required by NEPA regulations (40 CFR 1502.14[c]).

**Proposed Action Alternative:** The Proposed Action would provide the equipment, personnel and infrastructure at GFAFB to support CBP's mission. The Proposed Action would also include flight operations for the Predator B. Proposed facility projects include renovations to Building 600 and 541 to house the six CBP UASs and the associated Ground Control System (GCS) and construction associated with the installation of communications and backup power infrastructure.

**Alternative 3: Additional Facilities Construction:** The United States Air Force (USAF) retains first right of usage for the proposed buildings for this action (Buildings 541 and 600) and could require CBP to vacate the facilities. Should this occur, CBP would be required to construct a new facility to accommodate administrative and UAS functions and to provide hangar space for the Predator Bs. CBP's end strength would be six Predator B aircraft by Fiscal Year (FY) 12. Under this alternative, CBP would construct a hangar in the grassy area at the very south end of the Bravo Ramp. In addition to providing shelter for the aircraft, this hangar would also house the GCS functions for CBP and have a backup power supply.

**ENVIRONMENTAL CONSEQUENCES:** Implementation of the Proposed Action would disturb less than 0.5 acres for the construction of antenna towers, communication lines, and backup generators. Areas disturbed occur in improved or semi-improved areas within GFAFB.

The Proposed Action would have no direct impacts on surface waters and waters of the U.S., floodplains, threatened or endangered species, cultural, historical or archeological

resources, roadways/traffic or minority populations. Implementation of the Proposed Action is anticipated to have minor impacts to all resources at GFAFB.

No significant adverse effects to the natural or human environment, as defined in 40 CFR Section 1508.27 of the CEQ's Regulations for Implementing NEPA, are expected upon implementation of the Proposed Action.

**MITIGATION:** Mitigation measures are identified for each resource category that could be potentially affected. Only minimal disturbance of soils would result from the implementation of the Proposed Action. Many of these measures have been incorporated as standard operating procedures by CBP in similar past projects. It is CBP policy to mitigate adverse impacts through a sequence of avoidance, minimization, and compensation. These mitigation measures detailed below will be incorporated into a Project Management Plan. If any potentially adverse effects of this project are identified, the following measures will be employed:

**General Construction Activities:** Best Management Practices (BMPs) will be implemented as standard operating procedures during all construction activities, and would include proper handling, storage, and/or disposal of solid and hazardous and/or regulated materials. To minimize potential impacts from solid and hazardous and regulated materials, all fuels, waste oils and solvents would be collected and stored in tanks or drums within a secondary containment system that consists of an impervious floor and bermed sidewalls capable of containing the volume of the largest container stored therein. The refueling of machinery will be completed in accordance with accepted industry and regulatory guidelines, and all vehicles will have drip pans during storage to contain minor spills and drips. Although it would be unlikely for a major spill to occur, any

spill of reportable quantities will be contained immediately within an earthen dike, and the application of an absorbent (e.g., granular, pillow, sock, etc.) will be used to absorb and contain the spill. A Spill Prevention Control and Countermeasures Plan (SPCCP) will be in place prior to the start of construction activities and all personnel will be briefed on the implementation and responsibilities of this plan as is typical in CBP projects. All spills will be reported to the designated CBP point of contact for the project. Furthermore, a spill of any petroleum liquids (e.g., fuel) or material listed in 40 CFR 302 Table 302.4 of a reportable quantity must be cleaned up and reported to the appropriate Federal and state agencies. Reportable quantities of those substances listed on 40 CFR 302 Table 302.4 will be included as part of the SPCC.

All waste oil and solvents will be recycled. All non-recyclable hazardous and regulated wastes will be collected, characterized, labeled, stored, transported, and disposed of in accordance with all Federal, state, and local regulations, including proper waste manifesting procedures.

Solid waste receptacles will be maintained at construction staging areas. Non-hazardous solid waste (trash and waste construction materials) will be collected and deposited in onsite receptacles. Solid waste will be collected and disposed of by a local waste disposal contractor.

**Surface Waters and Waters of the U.S.:** No direct impacts are anticipated to surface waters and waters of the U.S. BMPs would be utilized to minimize impacts from construction sites. All federal, state, local and USAF regulations would be complied with

during implementation of the Proposed Action or Alternative including the utilization of a SWPPP.

**Soils:** Vehicular traffic associated with construction activities and operational support activities will remain on established roads to the maximum extent practicable. Areas with highly erodible soils will be given special consideration when constructing the proposed project towers and access roads to ensure incorporation of various erosion control techniques such as, straw bales, silt fencing, aggregate materials, wetting compounds, and rehabilitation, where possible, to decrease erosion. Site rehabilitation will include revegetating or the distribution of organic and geological materials (i.e., boulders and rocks) over the disturbed area to reduce erosion while allowing the area to naturally vegetate. Additionally, erosion control measures and appropriate BMPs, as required and promulgated through the Stormwater Pollution Prevention Plan (SWPPP) and engineering designs, will be implemented before, during, and after construction activities.

Road maintenance shall avoid, to the greatest extent practicable, creating wind rows with soils once grading activities are completed. Any excess soils from construction activities will be used on-site to raise and shape road surfaces.

**Vegetation Resources:** Vegetation that is temporarily disturbed due to construction activities would be reseeded upon completion of construction activities.

**Cultural Resources:** No impacts are anticipated to cultural, historical, and archeological resources. In the unlikely event that previously unrecorded or unevaluated cultural resources are encountered during construction, CBP will notify GFAFB immediately, who will manage these resources in accordance with the GFAFB Integrated Cultural

Resources Management Plan (HQ AMC 2005), adhering to federal and state laws, as well as USAF regulations.

**Air Quality:** Mitigation measures will be incorporated to ensure that fugitive dust emission levels do not rise above the minimum threshold as required per 40 CFR 51.853(b)(1). Measures will include dust suppression methods such as access road watering to minimize airborne particulate matter that would be created during construction activities. Standard construction BMPs such as routine watering of the construction site as well as access roads to the site will be used to control fugitive dust during the construction phase of the proposed project. Potential increases to criteria pollutants are monitored at GFAFB under their Title V Permit. Should levels of these pollutants approach the NAAQS limits for the region effects to air quality would be reevaluated.

**Airspace Requirements.** CBP will coordinate closely with installation airfield operations, scheduling, and control functions at Grand Forks AFB to ensure wing aircraft and CBP UAS air and ground operations are conducted in a safe and cooperative environment. Additionally, CBP must obtain all necessary Federal Aviation Administration (FAA) certifications, permits and approvals prior to commencing air operations from Grand Forks AFB. The approved airspace construct will allow for UAS operations (take offs, landings, transition from Class D to Class A airspace) and UAS training operations (take offs, landings, and touch-and-goes). HQ AMC agrees with the CBP proposal to accomplish this, in coordination with the wing and the FAA, through the use of three separate Certificates of Authorization (COAs) (Transit, Operational and Training) and

Temporary Flight Restrictions (TFRs). We understand that these COAs allow for the three different types of UAS flight operations.

The transit COA would be utilized when aircraft are flown between Sierra Vista Airport, Arizona and GFAFB. It is anticipated that the transit COA would be required less than ten times per year. The operational COA would extend along the northern U.S. border encompassing an area approximately 100 miles north to south and 900 miles east to west, with an operating altitude of Flight Level (FL) 190 [approximately 19,000 feet above Mean Sea Level (MSL)] for the Predator B UAS. This would include Class A airspace controlled by the Minneapolis, Salt Lake, and Seattle Air Route Traffic Control Centers (ARTCC), and the Class D airspace currently existing around GFAFB to support USAF aircraft operations. The Predator B can operate safely and in concert with FAA requirements under Instrument Flight Rules (IFR).

The training COA would be specifically designed to support UAS pilot proficiency and certification in the immediate vicinity of GFAFB. Operations would be expected to be contained within GFAFB's existing controlled Class D airspace, and conform to established flight procedures currently used at GFAFB. Activities would include closed patterns, low approaches, simulated flame out approaches, touch-and-goes, full stop landings and takeoffs. The Training COA would be expected to support approximately 100 sorties per year. Training sorties would be approximately two to three hours in duration and would be scheduled to de-conflict with fixed wing operations.

In order to transit to Class A airspace, a TFR would be required for the safety and protection of other aircraft that may be using the same airspace. The TFR requires

activation during launch and recovery of Predator B operational missions. CBP would request a TFR activated for 1.5 hours ( $\pm$  45 minutes of scheduled operation time) for each launch and recovery operation. Anticipated nominal launch and/or recovery times are expected to be 7:00 AM local and 7:00 PM local. However, these times could vary depending upon individual mission requirements. UAS missions would be conducted in coordination with the GFAFB tower and airfield operations schedules to minimize risk and/or conflicts with current and any future fixed wing aircraft operations.

Use of the airspace associated with the proposed COAs and TFR would be mission dependant and would vary, but would not adversely impact the current or future fixed wing capability at GFAFB. With regard to lost data-link procedures, the CBP A&M will coordinate emergency termination procedures with the FAA through their COAs and TFR approval processes. Procedures similar to those established for existing aircraft will be formulated. CBP will be responsible for all notifications and environmental actions associated with a lost data link incident.

**Noise:** Construction noise would be minimized by planning construction to occur during daylight hours and ensuring that construction vehicles have properly functioning mufflers and that the vehicles are in good working order.

**Hazardous Materials:** Disposal of potentially hazardous materials would be handled through GFAFB Waste Management. All such materials would be handled in accordance with applicable Federal, state and local regulations.

If contaminated groundwater is encountered during the hangar construction, it will be managed in accordance with applicable laws and regulations. GFAFB implements BMPs

to minimize the potential for contaminants to reach nearby surface waters, and a Storm Water Pollution Prevention Plan (SWPPP) that includes water quality monitoring.

BMPs and appropriate measures would be strictly adhered to during construction to minimize erosion and control sedimentation. CBP is responsible for managing these materials in accordance with federal, state, and local regulations to protect their employees from occupational exposure to hazardous materials and to protect the public health of the surrounding community. The operating location would be responsible for the safe storage and handling of hazardous materials used in conjunction with all construction and demolition operations. These materials would be delivered to GFAFB in compliance with the Hazardous Materials Transportation Act under 49 CFR. Therefore, the Proposed Action will not have a long-term impact on the SQG status of GFAFB.

Any asbestos encountered during facility demolition would be the responsibility of the 319 ARW and is regulated under National Emission Standards for HAPs to prevent the release of asbestos fibers due to damage and disturbance of asbestos-containing materials. Exposed friable asbestos would be removed in accordance with USAF policy and applicable health laws, regulations, and standards.

It is recognized that Building 600 has the potential to contain asbestos. Therefore, all construction debris associated with Hangar 600 will be disposed of in accordance with applicable federal, state, and USAF regulations.

Sustainable design concepts emphasize state-of-the-art strategies for site development, efficient water and energy use and improved indoor environmental quality.

**FINDING:** Having independently evaluated and approved the scope and content of the August 2008 EA for the Beddown and Flight Operations of UAS at Grand Forks AFB prepared in cooperation with U.S. Customs and Border Protection Air and Marine, hereby incorporated by reference, I conclude the Proposed Action will not result in any significant effects to the environment. Provided the mitigation measures specified above and adopted in the DHS FONSI signed 6 August 2008 are implemented, no further environmental impact analyses will be required for the Proposed Action. In addition, this finding is conditioned upon Customs and Border Protection obtaining necessary approval from Federal Aviation Administration to conduct flight operations as discussed above and in the EA.



VERN M. FINDLEY II  
Lieutenant General  
Vice Commander  
Air Mobility Command



Date

**FINDING OF NO SIGNIFICANT IMPACT**

**ENVIRONMENTAL ASSESSMENT FOR THE  
BEDDOWN AND FLIGHT OPERATIONS OF UNMANNED AIRCRAFT  
SYSTEMS AT GRAND FORKS AIR FORCE BASE, NORTH DAKOTA**



**U.S. Department of Homeland Security**

**U.S. Customs and Border Protection**

**U.S. Border Patrol**

**Washington, D.C.**

*In cooperation with*

**U.S. Air Force**

**Air Mobility Command**

**Scott AFB, IL**

**AUGUST 2008**

**FINDING OF NO SIGNIFICANT IMPACT**  
**Environmental Assessment**  
**for the Beddown and Flight Operations of Unmanned Aircraft Systems (UAS)**  
**at Grand Forks Air Force Base, North Dakota**  
**U.S. Customs and Border Protection Air and Marine**

The mission of CBP Air and Marine (CBP A&M), the world's largest law enforcement air force, is to protect the American people and Nation's critical infrastructure through the coordinated use of integrated air and marine forces to detect, interdict and prevent acts of terrorism and the unlawful movement of people, illegal drugs and other contraband toward or across the borders of the United States.

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**PROJECT LOCATION:** The proposed location for this Project is Grand Forks Air Force Base (GFAFB) in North Dakota. GFAFB is located in Grand Forks County near the North Dakota-Minnesota border. The Base is adjacent to the City of Emerado, and 15 miles west of the City of Grand Forks.

**PURPOSE AND NEED:** The purpose of this action is to provide adequate and suitable infrastructure on and in the vicinity of Grand Forks Air Force Base (GFAFB), North Dakota to support UAS operations to be conducted by the U.S. DHS, and CBP. An integral part of the successful completion of CBP's mission involves the development, use and management of elements of the National Airspace System (NAS) required to support the flight of Predator B UAS at GFAFB.

CBP A&M has identified the need to establish a UAS operating location along the northern border. GFAFB has been identified as the location for the beddown of up to six Predator B UASs that will be vital to securing the Northern Border of the U.S. The implementation of this mission is a crucial component of DHS's layered approach to border security. The use of UASs in support of these mission requirements serves as a "force-multiplier" for this agency.

**ALTERNATIVES:** Three alternatives were considered: The No Action Alternative, the Proposed Action Alternative and Alternative 3; Additional Facilities Construction. Other alternatives considered but eliminated and not further analyzed in this EA are described below.

Alternative locations considered for the UAS beddown were Bellingham, Washington; Great Falls, Montana; Detroit, Michigan; and Plattsburgh, New York. These locations were considered but not carried forward for analysis in this EA for the following reasons: the limited number of aircraft available in the FY 08-12 timeframe, the centralized location afforded by GFAFB and the available facilities and secure infrastructure at GFAFB. These factors would provide CBP A&M with an optimal location to conduct their initial Northern Border operations. GFAFB's strategic location and proximity to the border along with the synergy of future USAF UAS operations and the opportunity to operate from a non-joint use airfield made GFAFB the ideal location for an initial operational center. As Predator B aircraft become operational, other locations would be separately evaluated for environmental consequences associated with operational beddown decisions.

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**Increased CBP Workforce Alternative.** Another alternative considered during the planning stages of this project was to increase the number of CBP agents to patrol portions of the northern border in lieu of UAS operations. Such efforts would require an enormous commitment of human resources and new facilities would require construction to accommodate the additional manpower necessary to patrol a given area. In addition, UAS operations can effectively occur throughout the night with little to no potential for injury, accident or death to CBP agents. The human resource and vehicular maintenance, coupled with the resulting depletion of resources, represented too great an environmental impact to be further considered as a reasonable alternative. The disadvantages associated with the additional manpower and vehicle requirements coupled with the resulting depletion of resources and ineffective mission completion did not outweigh the advantages of this alternative. Therefore, this alternative was eliminated from further consideration.

**No Action Alternative.** Under the No-Action Alternative, neither CBP personnel nor any CBP assets would deploy to GFAFB. No airspace management actions or modifications would occur. However, implementation of the No-Action Alternative would impact the successful implementation of the Northern Border mission and impair protection of U.S. national security interests. While the No Action Alternative does not satisfy the stated purpose and need, its inclusion in this EA is required by NEPA regulations (40 CFR 1502.14[c]).

**Proposed Action Alternative:** The Proposed Action would provide the equipment, personnel and infrastructure at GFAFB to support CBP's mission. The Proposed Action would also include flight operations for the Predator B. Proposed facility projects include renovations to Building 600 and 541 to house the six CBP UASs and the associated Ground Control System (GCS) and construction associated with the installation of communications and backup power infrastructure.

**Alternative 3: Additional Facilities Construction:** The United States Air Force (USAF) retains first right of usage for the proposed buildings for this action (Buildings 541 and 600) and could require CBP to vacate the facilities. Should this occur, CBP would be required to construct a new facility to accommodate administrative and UAS functions and to provide hangar space for the Predator Bs. CBP's end strength would be six Predator B aircraft by Fiscal Year (FY) 12. Under this alternative, CBP would construct a hangar in the grassy area at the very south end of the Bravo Ramp. In addition to providing shelter for the aircraft, this hangar would also house the GCS functions for CBP and have a backup power supply.

**ENVIRONMENTAL CONSEQUENCES:** Implementation of the Proposed Action would disturb less than 0.5 acres for the construction of antenna towers, communication lines, and backup generators. Areas disturbed occur in improved or semi-improved areas within GFAFB.

The Proposed Action would have no direct impacts on surface waters and waters of the U.S., floodplains, threatened or endangered species, cultural, historical or archeological

resources, roadways/traffic or minority populations. Implementation of the Proposed Action is anticipated to have minor impacts to all resources at GFAFB.

No significant adverse effects to the natural or human environment, as defined in 40 CFR Section 1508.27 of the CEQ's Regulations for Implementing NEPA, are expected upon implementation of the Proposed Action.

**MITIGATION:** Mitigation measures are identified for each resource category that could be potentially affected. Only minimal disturbance of soils would result from the implementation of the Proposed Action. Many of these measures have been incorporated as standard operating procedures by CBP in similar past projects. It is CBP policy to mitigate adverse impacts through a sequence of avoidance, minimization, and compensation. These mitigation measures detailed below will be incorporated into a Project Management Plan. If any potentially adverse effects of this project are identified, the following measures will be employed:

**General Construction Activities:** Best Management Practices (BMPs) will be implemented as standard operating procedures during all construction activities, and would include proper handling, storage, and/or disposal of solid and hazardous and/or regulated materials. To minimize potential impacts from solid and hazardous and regulated materials, all fuels, waste oils and solvents would be collected and stored in tanks or drums within a secondary containment system that consists of an impervious floor and bermed sidewalls capable of containing the volume of the largest container stored therein. The refueling of machinery will be completed in accordance with accepted industry and regulatory guidelines, and all vehicles will have drip pans during storage to contain minor spills and drips. Although it would be unlikely for a major spill to occur, any

spill of reportable quantities will be contained immediately within an earthen dike, and the application of an absorbent (e.g., granular, pillow, sock, etc.) will be used to absorb and contain the spill. A Spill Prevention Control and Countermeasures Plan (SPCCP) will be in place prior to the start of construction activities and all personnel will be briefed on the implementation and responsibilities of this plan as is typical in CBP projects. All spills will be reported to the designated CBP point of contact for the project. Furthermore, a spill of any petroleum liquids (e.g., fuel) or material listed in 40 CFR 302 Table 302.4 of a reportable quantity must be cleaned up and reported to the appropriate Federal and state agencies. Reportable quantities of those substances listed on 40 CFR 302 Table 302.4 will be included as part of the SPCC.

All waste oil and solvents will be recycled. All non-recyclable hazardous and regulated wastes will be collected, characterized, labeled, stored, transported, and disposed of in accordance with all Federal, state, and local regulations, including proper waste manifesting procedures.

Solid waste receptacles will be maintained at construction staging areas. Non-hazardous solid waste (trash and waste construction materials) will be collected and deposited in onsite receptacles. Solid waste will be collected and disposed of by a local waste disposal contractor.

**Surface Waters and Waters of the U.S.:** No direct impacts are anticipated to surface waters and waters of the U.S. BMPs would be utilized to minimize impacts from construction sites. All federal, state, local and USAF regulations would be complied with

during implementation of the Proposed Action or Alternative including the utilization of a SWPPP.

**Soils:** Vehicular traffic associated with construction activities and operational support activities will remain on established roads to the maximum extent practicable. Areas with highly erodible soils will be given special consideration when constructing the proposed project towers and access roads to ensure incorporation of various erosion control techniques such as, straw bales, silt fencing, aggregate materials, wetting compounds, and rehabilitation, where possible, to decrease erosion. Site rehabilitation will include revegetating or the distribution of organic and geological materials (i.e., boulders and rocks) over the disturbed area to reduce erosion while allowing the area to naturally vegetate. Additionally, erosion control measures and appropriate BMPs, as required and promulgated through the Stormwater Pollution Prevention Plan (SWPPP) and engineering designs, will be implemented before, during, and after construction activities.

Road maintenance shall avoid, to the greatest extent practicable, creating wind rows with soils once grading activities are completed. Any excess soils from construction activities will be used on-site to raise and shape road surfaces.

**Vegetation Resources:** Vegetation that is temporarily disturbed due to construction activities would be reseeded upon completion of construction activities.

**Cultural Resources:** No impacts are anticipated to cultural, historical, and archeological resources. In the unlikely event that previously unrecorded or unevaluated cultural resources are encountered during construction, CBP will notify GFAFB immediately, who will manage these resources in accordance with the GFAFB Integrated Cultural

Resources Management Plan (HQ AMC 2005), adhering to federal and state laws, as well as USAF regulations.

**Air Quality:** Mitigation measures will be incorporated to ensure that fugitive dust emission levels do not rise above the minimum threshold as required per 40 CFR 51.853(b)(1). Measures will include dust suppression methods such as access road watering to minimize airborne particulate matter that would be created during construction activities. Standard construction BMPs such as routine watering of the construction site as well as access roads to the site will be used to control fugitive dust during the construction phase of the proposed project. Potential increases to criteria pollutants are monitored at GFAFB under their Title V Permit. Should levels of these pollutants approach the NAAQS limits for the region effects to air quality would be reevaluated.

**Noise:** Construction noise would be minimized by planning construction to occur during daylight hours and ensuring that construction vehicles have properly functioning mufflers and that the vehicles are in good working order.

**Hazardous Materials:** Disposal of potentially hazardous materials would be handled through GFAFB Waste Management. All such materials would be handled in accordance with applicable Federal, state and local regulations.

If contaminated groundwater is encountered during the hangar construction, it will be managed in accordance with applicable laws and regulations. GFAFB implements BMPs to minimize the potential for contaminants to reach nearby surface waters, and a Storm Water Pollution Prevention Plan (SWPPP) that includes water quality monitoring.

BMPs and appropriate measures would be strictly adhered to during construction to minimize erosion and control sedimentation. CBP is responsible for managing these materials in accordance with federal, state, and local regulations to protect their employees from occupational exposure to hazardous materials and to protect the public health of the surrounding community. The operating location would be responsible for the safe storage and handling of hazardous materials used in conjunction with all construction and demolition operations. These materials would be delivered to GFAFB in compliance with the Hazardous Materials Transportation Act under 49 CFR.

Therefore, the Proposed Action will not have a long-term impact on the SQG status of GFAFB.

Any asbestos encountered during facility demolition would be the responsibility of the 319 ARW and is regulated under National Emission Standards for HAPs to prevent the release of asbestos fibers due to damage and disturbance of asbestos-containing materials. Exposed friable asbestos would be removed in accordance with USAF policy and applicable health laws, regulations, and standards.

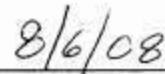
It is recognized that Building 600 has the potential to contain asbestos. Therefore, all construction debris associated with Hangar 600 will be disposed of in accordance with applicable federal, state, and USAF regulations.

Sustainable design concepts emphasize state-of-the-art strategies for site development, efficient water and energy use and improved indoor environmental quality.

**FINDING:** Based upon the results of the EA and the mitigation measures to be incorporated as part of the Proposed Action, it has been concluded that the Proposed Action will not result in any significant effects to the environment. Therefore, no further environmental impact analysis is warranted.



Robert F. Janson, Acting Executive Director  
Facilities Management and Engineering  
U.S. Customs and Border Protection



Date

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